C2P FORUM
CONNECT TO PEOPLE

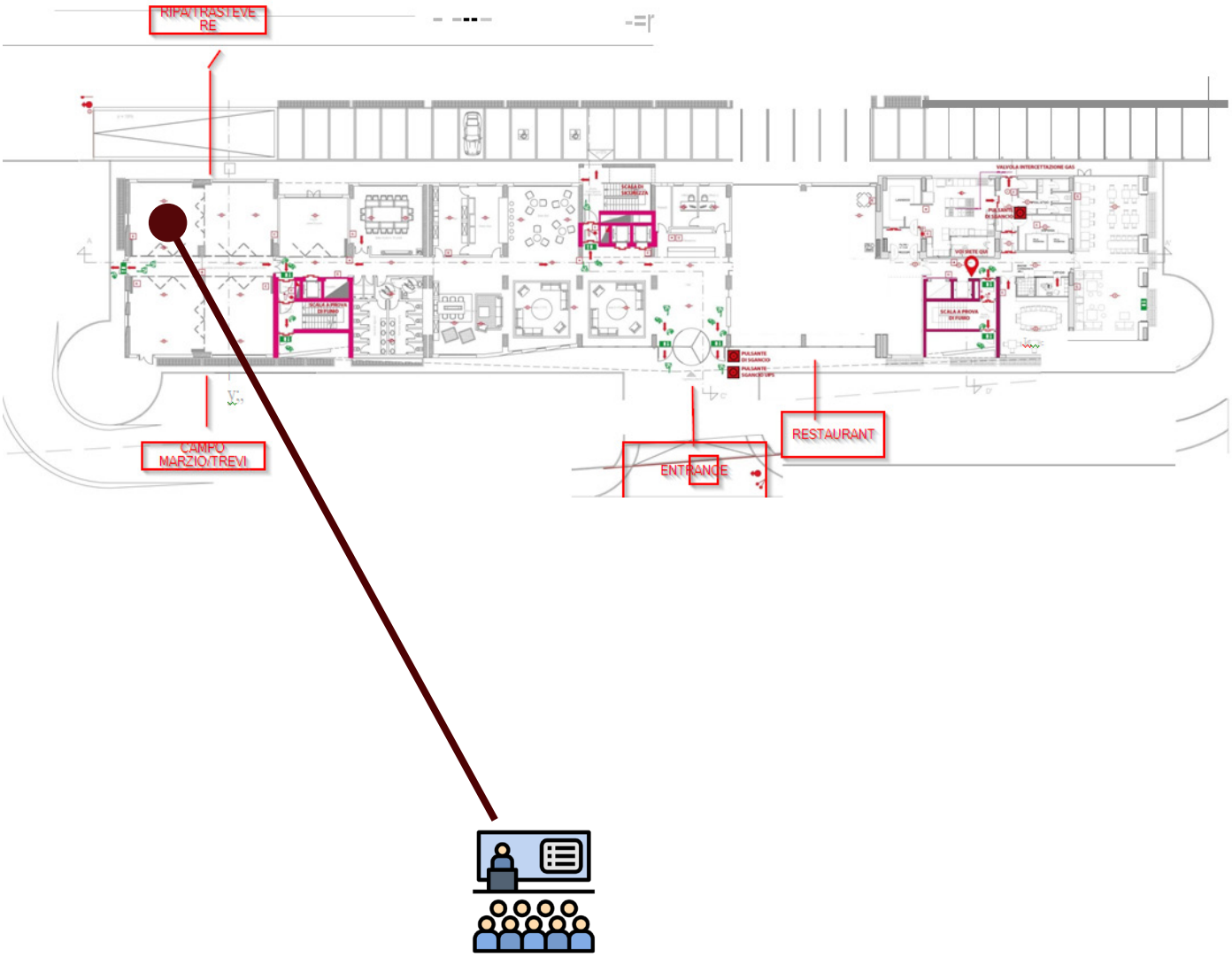
European

# HEMATOLOGY AND BLOOD DISORDERS CONGRESS

April 14-15, 2025
**Rome, Italy**

**Address:** 355 S. Main St., Falls Tower
1st Floor, Greenville,
South Carolina, 29601, USA

# Floor Map




#ConferenceHall - Ripa

## Wifi Details:

**Username:** H10PLUS
**Password:** HRC_3509

# SCIENTIFIC PROGRAM #DAY 1 - April 14, 2025

## Meeting Hall: Ripa

**9.00 - 9.45 Registrations**

**Moderator**

**Anna E. Marneth,** Radboud University Medical Center, The Netherlands

**9.45 - 10.00 Introduction**

| Keynote Presentations | |
|---|---|
| 10.00 - 10.45 | **Title:** Improvement of Quality of Life, Psychological Distress and Symptoms by Inpatient Cancer Rehabilitation. A Longitudinal Study by Electronic Patient-Reported Outcomes |
| **Thomas Licht,** Ludwig Boltzmann for Rehabilitation Research, Austria | |
| 10.45 - 11.30 | **Title:** Mechanisms of Formation of Antibodies against Blood Group Antigens that do not Exist in the Body |
| **Alexander A. Mironov,** The AIRC Institute of Molecular Oncology, Italy | |
| **11.30 - 11.45** | **Networking and Refreshments @ Lobby Bar** |
| 11.45 - 12.30 | **Tittle:** Targeting Microtentacles and Mechanotransduction to Reduce Breast Cancer Metastasis |
| **Stuart S. Martin,** University of Maryland School of Medicine, USA | |

| Oral Presentations | |
|---|---|
| **Session Chairs:**<br>**Thomas Licht,** Ludwig Boltzmann for Rehabilitation Research, Austria<br>**Alexander A. Mironov,** The AIRC Institute of Molecular Oncology, Italy | |
| **Sessions:** Head and Neck Cancer \| Myelodysplastic and Myeloproliferative Disorders \| Cancer Biology \| Hemostasis and Thrombosis \| Myelodysplastic and Myeloproliferative Disorders \| Hematology-Oncology \| Emerging Technologies in Hematology | |
| 12.30 - 12.55 | **Title:** Role of Estrogen Receptors in Head and Neck Squamous Cell Carcinoma: In Search for New Biomarkers and Therapeutic Targets |
| **Petar Ozretić,** Ruđer Bošković Institute, Croatia | |
| **12.55 - 13.10** | **Group Photo** |
| **13:10 - 14.00** | **Lunch @ Ristorante** |
| 14.00 - 14.25 | **Title:** The Neural Tourniquet: A Paradigm Shift in Hemostatic Therapeutics |
| **Alejandro Covalin,** Spark Biomedical Inc, USA | |

| | |
|---|---|
| 14.25 - 14.50 | **Title:** Uncovering Genetic and Therapeutic Vulnerabilities in CALR-Mutant Myeloproliferative Neoplasms |
| **Anna E. Marneth,** Radboud University Medical Center, The Netherlands | |
| **Oral Presentations** | |
| **Session Chairs:**<br>**Stuart S. Martin,** University of Maryland School of Medicine, USA | |
| **Sessions:** Hematology-Oncology \| Artificial Intelligence in Cancer \| Cancer Biology \| Hemostasis and Thrombosis | |
| 14:50 - 15:15 | **Title:** Empowering Healthcare Professionals in Oncology: The DigiCanTrain Initiative for Digital Health Competencies |
| **Clara Madrid-Alejos,** Catalan Institute of Oncology (ICO), Spain | |
| 15:15 - 15:40 | **Title:** Hemostatics Abnormalities in Patient with Waldenstrom's Macroglobulinemia |
| **Mariachiara Gagliardi,** AORN Moscati, Italy | |
| **Poster Presentation (15.40 - 16.00)** | |
| P01 | **Title:** Automated Morphological Analysis of Bone Marrow Aspiration for Myelodysplastic Syndrome (MDS) Using AI- assisted Digital Microscopy |
| **Ingrid Brezaniova,** West Medica Produktions-und Handels- GmbH, Austria | |
| **16:00- 16.30** | **Refreshments @ Lobby Bar** |
| **Video Presentations** | |
| 16.30 - 16:50 | **Title:** Cancer's Fuel Choice: A Genuine Metabolic Vulnerability |
| **Min-Sik Lee,** Pohang University of Science and Technology (POSTECH), South Korea | |
| 16:50 - 17:10 | **Title:** Importance of Oral Health and Care in Oral Cancer Survivors |
| **Gaurav Vishal,** Prathima Cancer Institute, India | |
| **E-posters** | |
| EPO1 | **Title:** Association of Hemoglobin to Red Blood Cell Distribution Width Ratio with Mortality after Coronary Artery Bypass Grafting |
| **Bufan Zhang,** Tianjin Medical University General Hospital, China | |
| EPO2 | **Title:** Hemostatic Effect of 3D-Printed Hip Fixators in Children with Retinoblastoma after Intra-Arterial Chemotherapy: A Non-Randomized Controlled Trial |
| **Lili Hou,** Shanghai Jiao Tong University School of Medicine, China | |

| | |
|---|---|
| EPO3 | **Title:** Adamts13 Laboratory Test in Patients with Suspicion of Thrombotic Thrombocytopenic Purpura, “Annunziata”A.H. (CS, Italy), years 2020-2024 |
| **Livia Bernardi,** Annunziata Hospital, Italy | |
| EPO4 | **Title:** Edible and Injectable Liquid Plasma Medicine for the Treatment of All Types of Cancers |
| **Tahereh Safari,** Arta Nano Biophysics Company, Iran | |

**Day 1 Concludes followed by Award Ceremony and Vote of Thanks**

# Keynote

European
Hematology and Blood Disorders Congress
April 14-15, 2025 | Rome, Italy

# IMPROVEMENT OF QUALITY OF LIFE, PSYCHOLOGICAL DISTRESS AND SYMPTOMS BY INPATIENT CANCER REHABILITATION. A LONGITUDINAL STUDY BY ELECTRONIC PATIENT-REPORTED OUTCOMES

**Thomas Licht[1,2], Vincent Grote[1], Michael Fischer[1] and David Riedl[1]**
*[1]Ludwig Boltzmann for Rehabilitation Research, Austria*
*[2]Rehabilitation Center St. Veit im Pongau, Austria*

## Abstract

The quality of life (QOL) of many cancer survivors is impaired by negative consequences of their disease, and side effects of chemotherapy, irradiaton or surgical procedures. Symptoms include pain, fatigue, nausea, weight loss, appetite loss, lymphedema, sleeping disorders and reduced muscular strength. Cancer rehabilitation is aimed at restoring these impairments. We were interested in identifying unmet needs of cancer survivors, and the improvement of QOL, symptoms, functions and psychological distress by rehabilitation were investigated. To this end, electronic patient-reported outcomes (ePRO) were collected from >4,400 cancer patients prior to, and at the end of a three-week, inpatient cancer rehabilitation measure. Subgroup analyses revealed that QOL was particularly low in lung, liver, and bladder cancer patients. Furthermore, highest levels of anxiety levels were noticed in patients with breast or thyroid cancer, while scores for depression were highest in liver and brain cancer patients. Severe fatigue was observed in patients with lung, liver, esophageal, bladder cancer, and myeloma patients. Patients of all 21 investigated cancer entities benefitted from rehabilitation with improvement of QOL and psychological distress, fatigue, emotional, social, role, and physical functions in each cancer entity with medium to large effect sizes. Moreover, improvement by rehabilitation was found in adolescent and young adult (AYA), middle-aged, and elderly (>70 years) as well as male and patients. Elderly patients displayed more severe impairment of physical function than the younger age groups but benefitted in similar fashion. In conclusion, or study shows that QOL of cancer survivors is markedly improved by rehabilitation in all patients groups, independently from tumor entity, age, sex, or the risk status.

## Biography

**Thomas Licht** is a distinguished hematologist and oncologist with a comprehensive career spanning clinical practice, research, and leadership roles across Germany and Austria. He completed his medical training at the University of Freiburg, Germany, specializing in internal medicine, hematology, and oncology from 1984 to 1992. Dr. Licht further honed his research skills as a Special Volunteer at the Laboratory of Molecular Biology, National Cancer Institute, NIH, Bethesda, USA, during 1993-1995 and 1997-1999.

In his academic career, Dr. Licht served as Senior Physician and Assistant Professor at the Department of Hematology/Oncology/Immunology/Infectiology, University of Ulm, Germany, from 1996 to 1997. He then advanced to Senior Physician and Associate Professor at the Department of Hematology/Oncology, Technical University of Munich, Germany, holding the position from 1999 to 2006. Transitioning to leadership roles, he was the Medical Director of the Department of Medical Oncology at Schlossbergklinik Oberstaufen, Germany, between 2006 and 2015. Subsequently, Dr. Licht served as Medical Director of the Department of Oncological Rehabilitation at the Rehabilitation Center St. Veit im Pongau, Austria, from 2015 to 2022.

Since 2022, Dr. Licht has been leading the Oncology Research Group at the Ludwig Boltzmann Institute for Rehabilitation Research in Vienna, Austria. His current research focuses on health-related quality of life in cancer survivors and the benefits of rehabilitation across various cancer entities.

**Thomas Licht**
*Ludwig Boltzmann for Rehabilitation Research, Austria*

C2P FORUM
CONNECT TO PEOPLE
European
Hematology and Blood Disorders Congress
April 14-15, 2025 | Rome, Italy

# MECHANISMS OF FORMATION OF ANTIBODIES AGAINST BLOOD GROUP ANTIGENS THAT DO NOT EXIST IN THE BODY

**Alexander A Mironov[1], Maksim A Savin[2], Anna V Zaitseva[3], Ivan D Dimov[1] and Irina S Sesorova[4]**

[1]*The AIRC Institute of Molecular Oncology, Italy*
[2]*Perm National Research Polytechnic University, Russia*
[3]*Saint Petersburg State Pediatric Medical University, Russia*
[4]*Ivanovo State Medical Academy, Russia*

## Abstract

The system of the four different human blood groups is based on the oligosaccharide antigens A or B, which are located on the surface of blood cells and other cells including endothelial cells, attached to the membrane proteins or lipids. After transfusion, the presence of these antigens on the apical surface of endothelial cells could induce an immunological reaction against the host. The final oligosaccharide sequence of AgA consists of Gal-GlcNAc-Gal (GalNAc)-Fuc. AgB contains Gal-GlcNAc-Gal (Gal)-Fuc. These antigens are synthesized in the Golgi complex (GC) using unique Golgi glycosylation enzymes (GGEs). People with AgA also synthesize antibodies against AgB (group A [II]). People with AgB synthesise antibodies against AgA (group B [III]). People expressing AgA together with AgB (group AB [IV]) do not have these antibodies, while people who do not express these antigens (group O [0; I]) synthesise antibodies against both antigens. Consequently, the antibodies are synthesized against antigens that apparently do not exist in the body. Here, we compared the prediction power of the main hypotheses explaining the formation of these antibodies, namely, the concept of natural antibodies, the gut bacteria-derived antibody hypothesis, and the antibodies formed as a result of glycosylation mistakes or de-sialylation of polysaccharide chains. We assume that when the GC is overloaded with lipids, other less specialized GGEs could make mistakes and synthesize the antigens of these blood groups. Alternatively, under these conditions, the chylomicrons formed in the enterocytes may, under this overload, linger in the post-Golgi compartment, which is temporarily connected to the endosomes. These compartments contain neuraminidases that can cleave off sialic acid, unmasking these blood antigens located below the acid and inducing the production of antibodies.

## Biography

**Alexander A. Mironov** earned his MD from Ivanovo State Medical University, Russia, in 1974, followed by a PhD in 1978 for his thesis on kidney viability preservation. In 1985, he obtained his DSc with a focus on arterial endothelium in hypertension. From 1987 to 1994, he was a professor of gross anatomy at Ivanovo State Medical University and served as Dean of the Therapeutic Faculty from 1988 to 1991. In 1994, Mironov moved to Italy, becoming Chief of the Morphological Unit at Consorzio "MARIO NEGRI SUD", S. Maria Imbaro, until 1999. He then led the Unit of Intracellular Traffic at the same institution until 2010. Since September 2010, he has been the Head of the Laboratory of Electron Microscopy at The AIRC Institute of Molecular Oncology, Milan, Italy

**Alexander A. Mironov**
*The AIRC Institute of Molecular Oncology, Italy*

C2P FORUM
CONNECT TO PEOPLE

European

Hematology and Blood Disorders Congress

April 14-15, 2025 | Rome, Italy

# TARGETING MICROTENTACLES AND MECHANOTRANSDUCTION TO REDUCE BREAST CANCER METASTASIS

**Stuart S Martin**
*University of Maryland School of Medicine, USA*

## Abstract

Cancer drug discovery focuses predominantly on inhibiting tumor growth, rather than the metastatic spread of tumor cells to distant tissues, which causes most cancer patient deaths. The Martin lab discovered unique microtentacles that form on the surface of tumor cells in the free-floating microenvironments encountered during metastasis, such as the bloodstream or lymphatics. Microtentacles promote tumor cell reattachment, aggregation and the in vivo retention of circulating tumor cells in distant tissues. Stabilization of microtubules through post-translational modifications to alpha-tubulin (detyrosination, acetylation) supports microtentacle formation. While numerous FDA-approved cancer drugs reduce tumor growth through broad disruption of microtubules, our work reveals opportunities to target these specific microtubule modifications for improving the treatment of metastasis and reducing the side effects caused by indiscriminate microtubule disruption. Together with bioengineers and physicists at College Park and Johns Hopkins, we have patented microfluidic cell tethering technology (TetherChip) to rapidly gauge metastatic phenotypes and drug responses in patient tumor cells in less than one hour. Our ongoing cell physiology studies show that muscle, bone and epithelial cells use stabilized microtubules to sense mechanical forces resulting in rapid calcium signaling. This highly conserved mechanotransduction pathway is disrupted in metastatic breast tumor cells and provides new ways by which targeting stabilized microtubules could help improve the precision treatment of cancer metastasis.

## Biography

**Stuart S. Martin** is working to apply physical science and engineering approaches to study the physiology of circulating tumor cells (CTCs), and discovered novel microtentacles on the surface of CTCs that promote metastasis. Dr. Martin received his Ph.D. from the University of California, San Diego in 1998, after training as a Howard Hughes undergraduate research fellow at the University of Virginia. Dr. Martin completed a Damon Runyon postdoctoral fellowship at Harvard Medical School that combined functional genomic studies with mouse models of breast tumor metastasis, under the mentorship of Dr. Phil Leder. Dr. Martin is currently the Drs. Angela and Harry Brodie Professor of Translational Cancer Research and Deputy Director of the Marlene and Stewart Greenebaum Comprehensive Cancer Center (UMGCCC).

**Stuart S. Martin**
*University of Maryland School of Medicine, USA*

# Day - 1

# Oral

C2P FORUM
CONNECT TO PEOPLE
European
Hematology and Blood Disorders Congress
April 14-15, 2025 | Rome, Italy

# THE ROLE OF ESTROGEN RECEPTORS IN HEAD AND NECK SQUAMOUS CELL CARCINOMA: IN SEARCH FOR NEW BIOMARKERS AND THERAPEUTIC TARGETS

**Petar Ozretić**
*Ruđer Bošković Institute, Croatia*

## Abstract

Head and neck squamous cell carcinoma (HNSCC) is a diverse group of tumors that affect the mucosa of the upper aerodigestive tract. Despite advancements in treatment, tumors in this area are linked to a high mortality rate and reduced quality of life. Their development is primarily associated with alcohol and tobacco consumption, as well as with HPV infections. Since men have a significantly higher risk of HNSCC, the role of sex hormones and their receptors, especially estrogen (ER), is considered as an additional risk factor. This gender-specific susceptibility suggests male-specific risk factors or protective hormonal mechanisms in females. Therefore, we have initiated a comprehensive investigation into the involvement of both nuclear and membrane-bound estrogen receptors in HNSCC, aiming to unravel the complex interplay of molecular pathways underlying the HNSCC development and progression. Using quantitative real-time PCR (qPCR) we analyzed the mRNA expression of nuclear and membrane estrogen receptors (ESR1, ESR2, GPER1 and SCN2A) in about 90 primary HNSCC tumors, 25 positive lymph nodes, and 40 healthy oral mucosa fresh tissue samples. The difference in relative gene expression levels of ERs in HNSCC tissue samples were compared with the patients' age, sex, stage and grade of cancer, HPV-status, and primary tumor site. Since the ESR1 gene, which codes for estrogen receptor alpha (ERα), showed statistically significantly increased expression in both primary tumors and positive lymph nodes compared to the healthy tissue, we decided to further study how modification of estrogen receptor activity with both activators (estradiol) and inhibitors (tamoxifen) affects the biological characteristics of HNSCC cells. Therefore, we established the ESR1 stable expression cell line CAL-27, using the CRISPR/Cas9 system. Our results indicate that tamoxifen treatment reduces the viability of CAL-27-ESR1 cells compared to the parental cell line. Furthermore, both colony formation and migration capacity were also reduced after tamoxifen treatment in CAL-27-ESR1 cells, while estradiol treatment enhanced the migration of knock-in cell lines at lower doses. On the other hand, estradiol treatment of CAL-27-ESR1 cells at 10 nM dose

## Biography

**Petar Ozretić** is a molecular biologist by education and holds a PhD degree from the Biomedicine and Health area of science. At moment he is a Senior Research Associate at the Ruđer Bošković Institute, Zagreb, Croatia, and head of the Laboratory for Hereditary Cancer at the same institute. He is also an Adjunct Assistant Professor at the Josip Juraj Strossmayer University of Osijek, Osijek, Croatia. Dr. Ozretić is one of the cofounders of the Croatian Association for Cancer Research (HDIR), one of 14 national societies affiliated to the European Association for Cancer Research (EACR), where he serves as a secretary from 2009. He is a member of editorial and review boards of many scientific journals, has published more than 55 peer-reviewed articles, and participated in numerous research projects.

inhibited the transition to G2/M phases of cell cycle and decreased the number of apoptotic cells compared to the parental cells. To sum up, our results indicate that the higher expression of ESR1 in HNSCC affects the biological characteristics of HNSCC cells, but further investigation will enable better insight into its role as potential biomarker or therapeutic target for HNSCC.

European
Hematology and Blood Disorders Congress
April 14-15, 2025 | Rome, Italy

# THE NEURAL TOURNIQUET: A PARADIGM SHIFT IN HEMOSTATIC THERAPEUTICS

**Alejandro Covalin[1], Christopher J Czura[1], Melanie McWade[1], Caroline Benner[1], Brooke Le[1], Caroline Benner[1], Kimiko Harada[1], Jared Huston[2], Carlos Bravo-Iñiguez[2], Julien Papoin[2], Maaryj Ahmad[2], Isabella Mirro[2], Lionel Blanc[2] and Navid Khodaparast[1]**

[1]*Spark Biomedical Inc, USA*
[2]*Feinstein Institutes for Medical Research, USA*

## Abstract

The discovery and clinical translation of the "neural tourniquet" represents a two-decade journey revealing a novel neurological control mechanism for hemostasis. Initial observations that vagus nerve stimulation (VNS) reduced hemorrhage in murine and porcine models led to systematic investigation of an unexpected neural pathway controlling bleeding.

Preclinical studies in hemophilia A rodent models demonstrated that invasive VNS reduced blood loss by 75% without increasing systemic factor VIII activity or causing thromboembolism. Subsequent mechanistic investigations revealed a precise neuro-immune-platelet axis: vagus nerve activation triggers acetylcholine-producing T lymphocytes in the spleen, which stimulate α7 nicotinic acetylcholine receptors on platelets. This increases platelet calcium levels and enhances thrombin-mediated alpha granule release, accelerating clot formation independently of factor VIII. Experiments with splenectomized animals, T cell-deficient mice, and α7nAChR knockout models systematically established each component of this pathway.

Translation to humans began with the development of transcutaneous auricular neurostimulation (tAN), a non-invasive technique targeting vagus and trigeminal nerve branches. In healthy subjects, tAN significantly altered platelet biomarkers, increasing surface expression of activated GP IIb/IIIa and P-selectin following thrombin exposure. Thromboelastography confirmed functional enhancement with decreased clot initiation times and increased clot strength, validating conservation of this pathway in humans.

A pilot study in women with von Willebrand Disease (vWD) Type 1 experiencing heavy menstrual bleeding (HMB) showed, for the first time, that the neural tourniquet pathway can be activated non-invasively in humans. vWD patients self-administered tAN during

## Biography

**Alejandro Covalin** is a translational neuroengineer specializing in bioelectronic medicine, focusing on developing innovative neurostimulation technologies for various medical applications. As Co-Founder and CTO of Spark Biomedical, he leads the development of transcutaneous auricular neurostimulation (tAN) technologies that modulate neural pathways to regulate physiological processes, including treatments for bleeding disorders. Dr. Covalin holds 20 granted patents in neurostimulation and has authored numerous peer-reviewed publications in neurotechnology, physiological modulation, and clinical neuromodulation. He earned his PhD in Biomedical Engineering with a focus on Neuroengineering from UCLA, where he pioneered hypothalamic deep brain stimulation techniques. Before founding Spark Biomedical, he advanced therapeutic approaches for migraine, obesity, and hypertension while working at top medical tech companies like Medtronic, Amgen and CVRx. His current research explores non-invasive neuromodulation for conditions such as bleeding disorders, women's health, chronic pain, and substance use disorders, offering alternatives to traditional pharmacological treatments.

menstruation, resulting in a 57.1% reduction in menstrual blood loss ($p<0.001$) and a 19.7% reduction in menstruation duration ($p<0.01$). All participants showed improved bleeding profiles despite already receiving standard therapies.

This journey from initial discovery to clinical application has revealed a fundamentally new understanding of hemostatic regulation that bridges neurological, immunological, and hematological systems. The neural tourniquet offers a non-pharmacological, self-administered approach that enhances clotting specifically at injury sites without promoting systemic hypercoagulability—addressing limitations of conventional factor replacement and pharmacological interventions. Multiple clinical trials are currently ongoing to assess additional clinical applications. This paradigm shift in hemostatic control may present an innovative treatment for multiple conditions and scenarios. From treating bleeding disorders at home to surgical and trauma applications in a hospital setting, the Neural Tourniquet may offer an effective, easy-to-use hemostatic therapy with broad applicability.

C2P FORUM
CONNECT TO PEOPLE
European
Hematology and Blood Disorders Congress
April 14-15, 2025 | Rome, Italy

# UNCOVERING GENETIC AND THERAPEUTIC VULNERABILITIES IN CALR-MUTANT MYELOPROLIFERATIVE NEOPLASMS

**Anna E Marneth[1,2], Jonas S Jutzi[1] and Ann Mullally[1,3]**
[1]*Brigham and Women's Hospital, USA*
[2]*Radboud University Medical Center, The Netherlands*
[3]*Palo Alto VA Medical Center, USA*

## Abstract

The BCR: ABL1-negative myeloproliferative neoplasms (MPN) are chronic blood cancers characterized by somatic mutations that arise in the hematopoietic stem cell compartment. These mutations, frequently occurring in the JAK2, *CALR*, and MPL genes, activate the JAK-STAT signaling pathway and cause increased proliferation of one or more myeloid lineages. Since there is a clinical unmet need for clonally selective, curative therapies for MPN, we aimed to identify unique dependencies in *CALR*-mutant MPNs. For this, we performed a whole-genome clustered regularly interspaced short palindromic repeats (CRISPR) knockout depletion screen in mutant *CALR*-transformed hematopoietic cells. This screen revealed that genes in the N-glycan biosynthesis, unfolded protein response (UPR), and the protein secretion pathways were the most significantly depleted in *CALR*-mutant transformed cells compared to control cells.

Subsequently, we showed that genetic and pharmacological inhibition of N-glycosylation impaired the growth of mutant *CALR*-transformed cells by reducing MPL cell surface expression. Importantly, we found that Calr-mutant knockin cells were preferentially sensitive to treatment with the N-glycosylation and glycolysis inhibitor 2-deoxy-glucose (2-DG) as compared to wildtype cells in mice, and normalized hallmarks of MPN disease. Finally, we validated our findings in primary human cells; we showed that pharmacological inhibition of N-glycosylation significantly reduced megakaryocyte colony formation only in patient-derived *CALR*-mutant bone marrow, without significant effects on control bone marrow.

We then followed up on the genetic vulnerability of mutant *CALR*-transformed hematopoietic cells to knocking out genes implicated in the unfolded protein response. We identified differential upregulation of unfolded proteins, the proteasome and the endoplasmic reticulum stress response in *CALR*-mutant hematopoietic stem cells (HSCs) and megakaryocyte progenitors. We further found that combined pharmacological inhibition of the proteasome and IRE1-XBP1 axis of the ER stress response

## Biography

**Anna E. Marneth** acquired her Bsc. Life Science and Technology (2009) and Msc. Biomedical Sciences (2011) at the University of Groningen, the Netherlands. During her Msc. research internships at the Experimental Hematology department of the University Medical Center Groningen, the Netherlands, and Department of Medicine at the Walter and Eliza Hall Institute, Australia, she became fascinated with the development of blood cells and blood cancers. During her PhD (2012-2017) at the Laboratory of Hematology, Radboudumc, she led research projects on the identification of inherited mutations in transcription factors (GFI1B, RUNX1, GATA1) and corresponding molecular, cellular, and clinical features in bleeding disorders (New England Journal of Medicine, Blood, and Haematologica). She has also uncovered molecular mechanisms of pathogenesis and vulnerabilities in myeloid malignancies characterized by mutations in transcription factors and epigenetic modifiers (Haematologica, Leukemia). Anna then performed her post-doctoral studies (2017-2022) in the Division of Hematology of the Brigham and Women's Hospital-Harvard Medical School, USA. Her post-doctoral work focussed on the pathogenesis of and novel therapeutic approaches for myeloproliferative neoplasms (MPN) (Nature Materials and Blood). Her research program at the Radboudumc (2022 - present) is centered around glycosylation in normal and malignant myeloid blood cell development.

preferentially targets Calr-mutated HSCs and megakaryocytic-lineage cells over wild-type cells in vivo, resulting in an amelioration of the MPN phenotype. In aggregate, our findings contribute to the development of novel treatments for *CALR*-mutant MPNs.

C2P FORUM
CONNECT TO PEOPLE
European
Hematology and Blood Disorders Congress
April 14-15, 2025 | Rome, Italy

# EMPOWERING HEALTHCARE PROFESSIONALS IN ONCOLOGY: THE DIGICANTRAIN INITIATIVE FOR DIGITAL HEALTH COMPETENCIES

**Clara Madrid-Alejos and Mireia Montserrat-Moreno**
*Catalan Institut of Oncology (ICO), Spain*

## Abstract

The increasing burden of cancer care necessitates innovative solutions to meet the growing demands of patients and healthcare systems. By 2050, global cancer cases are projected to reach 35 million, marking a 77% increase from 2022. In Europe alone, cases are expected to rise by 21% by 2040. The COVID-19 pandemic has accelerated the digital transformation of healthcare, underscoring the potential of eHealth to improve efficiency, communication, and patient-centered care. However, a significant gap remains: many healthcare professionals (HCPs) lack the necessary training to effectively utilize digital tools in oncology practice.

The EU4H-2022-PJ-06 DigiCanTrain project aims to bridge this gap by developing a comprehensive, structured training program to enhance digital competencies among both clinical and non-clinical HCPs. The curriculum is grounded in a systematic review of existing digital health competency frameworks and is organized into five core modules with 22 submodules. These modules are tailored to meet the needs of diverse HCPs, including nurses, medical practitioners, allied health professionals, and non-clinical staff. The training program is delivered through a combination of ThingLink® and Moodle®, incorporating micro-credentials that align with European higher education standards (EQF levels 6-8). A blended learning approach is employed, integrating web-based training with practical, real-world applications to ensure skill acquisition and implementation.

To measure the program's impact, a robust pre- and post-assessment methodology is used to evaluate improvements in digital skills, patient-centered communication, and the adoption of eHealth tools. Led by the Finnish Institute for Health and Welfare, the evaluation provides data-driven insights into the program's effectiveness. DigiCanTrain not only empowers HCPs, particularly nurses, but also promotes lifelong learning and advances the integration of digital health in oncology care. By equipping HCPs with the necessary digital competencies, the project aims to enhance the quality of cancer care, improve patient outcomes, and support the sustainable transformation of healthcare systems in the face of rising cancer burdens.

## Biography

**Clara Madrid Alejos** is a Senior Researcher at the Catalan Institute of Oncology (ICO) and an Associate Professor at the University of Vic (UVic). She is currently pursuing a PhD in Educational Psychology at the University of Barcelona, focusing on personalized learning and digital education in oncology. With extensive experience in European research projects like TRANSiTION and INTERACT, Clara manages training programs for healthcare professionals. Her research interests span digital learning, educational innovation in health, and social inclusion. Clara has authored numerous publications and is a passionate advocate for integrating technology into healthcare education.

During this presentation, we will discuss the DigiCanTrain project, its innovative training program, and its potential to transform oncology practice. We will highlight the curriculum's design, delivery methods, and evaluation framework, emphasizing its relevance in addressing the growing complexity of cancer care. This topic is particularly pertinent for the congress as it aligns with the urgent need for digital transformation in healthcare. By fostering digital literacy among HCPs, DigiCanTrain supports the advancement of patient-centered care and contributes to the broader goals of improving healthcare efficiency and outcomes in an increasingly digital world.

European
Hematology and Blood Disorders Congress
April 14-15, 2025 | Rome, Italy

# HEMOSTATICS ABNORMALITIES IN PATIENT WITH WALDENSTROM'S MACROGLOBULINEMIA

**Mariachiara Gagliardi, L Capone and A Ciampa**
*AORN Moscati, Italy*

## Abstract

**Background:** A 62-year-old man with suspected lymphoproliferative disease awaiting gastroscopy to confirm the localization of hematologic pathology in the stomach underwent first-level coagulation according to prehospitalization protocols. As the PT was prolonged and the aPTT was indeterminable. The blood coagulation profile tests revealed a few important changes: the PT was 5.03 (i.e. 0.80- 1.15) and the aPTT ratio (i.e. 0.85-1:20) was indeterminable.

**Methods/tests:** The aPTT was then performed with the patient's normal plasma pool plasma mixture at a ratio of 1:1, achieving a ratio of 6.04. The determination of lupus anticoagulant performed with dRVVT was positive. Antiphospholipid antibody (aPL) determination showed a positive value for anticardiolipin antibody IgM (6126 U7m/L; v.r.<20). In contrast, the anti-inflammatory antibodies β2-glycoprotein-I (aβ2GPI) IgG and IgM were both negative. The specific factors (II, V, VII, IX, IX and XI) were normal. Serum electrophoresis indicated the presence of a migrating monoclonal component (CM) in the γ-globulin zone. In the subsequent immunofixation of the serum, the CM could be typed in IgM-kappa (17.8 g/L). It was therefore hypothesised that the abnormal protein component could interfere with the coagulation tests. To test this hypothesis, the following experiment was planned: Isolation of CM IgM-kappa by polyacrylamide gel electrophoresis in the presence of sodium dodecyl sulphate and subsequent purification using HiTrap IgM Purification HP columns. The resulting CM was added in progressively increasing concentrations to a pool of normal plasma (PNP); PT and aPTT were performed with these different concentrations.

**Results/Conclusion:** The results showed a prolongation of both tests, a phenomenon that was not observed when a buffer solution was added to the PNP. Finally, these clotting times were checked with thromboelastography, which gave normal results. In this way, it was possible to determine the extent to which CM is functionally able to interfere with the system for determining clotting time.

## Biography

**Mariachiara Gagliardi** obtained her master's degree in biology from the University of Sannio in 2022, specializing in Clinical Pathology and Clinical Biochemistry at the University of Salerno. She carried out research at the University of Aveiro, Portugal (January/October 2021), focusing on toxicology. Since 2023 he has been working at the Hemostasis Center of the AORN Moscati.

# POSTERS

European
Hematology and Blood Disorders Congress
April 14-15, 2025 | Rome, Italy

# AUTOMATED MORPHOLOGICAL ANALYSIS OF BONE MARROW ASPIRATION FOR MYELODYSPLASTIC SYNDROME (MDS) USING AI-ASSISTED DIGITAL MICROSCOPY

**Ingrid Brezaniova**
*West Medica Produktions- und Handels- GmbH, Austria*

## Abstract

**Background/Objectives:** Myelodysplastic Syndrome (MDS) is a hematologic disorder characterized by dysplastic hematopoiesis and cytopenias, often requiring detailed morphological assessment for diagnosis and classification. The 5q deletion syndrome (MDS-del(5q)) represents specific dysplastic features in erythroid, myeloid, and megakaryocytic lineages. This study evaluates the Vision Pro Cell Imaging Analyzer with the Vision Bone Marrow Clinical Application Module for the detection and classification MDS-related dysplasia, aiming to enhance diagnostic accuracy and efficiency.

**Methods:** Bone marrow aspirates from three patients diagnosed with MDS-del(5q) were analyzed using the Vision Bone Marrow Clinical Application Module which employs AI- driven pre-classification algorithms. The samples were scanned using the both 10x objective (digital slide creation) and 100x-objective (pre-classification). The system autonomously conducted scanning, pre-classification, and cell counting of bone marrow elements. The preliminary classification based on AI was validated by a hematologist in accordance with the WHO 5th Edition (2022) MDS criteria.

**Results:** The system has demonstrated high-quality performance in cell classification: sensitivity and specificity were 85.3% and 99.0% for blasts, 97.5% and 95.7% for polychromatic erythroblasts, and 90.3% and 99.5% for band neutrophils, respectively. The proerythroblasts (81.3% sensitivity, 100% specificity), basophilic erythroblasts (95.4% sensitivity, 99.1% specificity), and myeloid precursors, including myelocytes (86.3% sensitivity, 99.1% specificity), metamyelocytes (88.9% sensitivity, 98.8% specificity), and segmented neutrophils (93.1% sensitivity, 99.6% specificity). The total number of cells reassigned between categories was 13.1%, indicating an overall pre- classification accuracy of 86.9%.

**Conclusions:** These findings support the ability of the Vision Bone Marrow Clinical Application Module to recognize dysplasia in MDS-del(5q). The system improves efficiency, reduces diagnostic subjectivity, and enhances the reproducibility of dysplasia detection.

## Biography

**Ingrid Brezaniova** is a Clinical Manager at West Medica with extensive experience in clinical research, laboratory management, and automatization in digital microscopy. She holds a Ph.D. in Analytical Chemistry from the University of Chemistry and Technology, Prague, where she specialized in functionalized nanoparticles for controlled drug release. She has contributed to drug delivery research, clinical diagnostics, and photodynamic anticancer therapy. At West Medica, she leads clinical projects in digital microscopy and has presented her findings at international congresses.

# DAY - 1
# Video

C2P FORUM
CONNECT TO PEOPLE
European
Hematology and Blood Disorders Congress
April 14-15, 2025 | Rome, Italy

# CANCER'S FUEL CHOICE: A GENUINE METABOLIC VULNERABILITY

**Min-Sik Lee**
*Pohang University of Science and Technology (POSTECH), South Korea*

## Abstract

Cancer harnesses the altered metabolism to thrive in a hostile milieu where desmoplasia and collapsed vasculature limit nutrient supply. This rewired metabolism as the hallmark of cancer, is shaped by genetic drivers and tumor microenvironment (TME) and provides a therapeutic opportunity. Major hurdles however, for anti-tumor metabolic interventions, are 1) the plasticity of metabolic pathways, 2) the high risk for toxicity and 3) the distinct availabilities of nutrients in TME. Here I will describe how nearby nutrients determine the cancer metabolism and how to leverage the environmental insights to tackle the challenges described above. Giving a concrete example, I will present a Pancreatic Ductal Adenocarcinoma (PDAC) dependence on an unconventional glutamine metabolism for polyamines synthesis via de novo ornithine synthesis, contrasting the arginine utilization in most adult normal tissues and other cancer types. This distinct metabolism allows PDAC to grow in their arginine-depleted local environment. Accordingly, disrupting de novo ornithine synthesis led to reduced tumor growth in both in vitro and in vivo mouse models of PDAC. Thus, the metabolic dependence of PDAC acquired from its unique TME, provides an attractive therapeutic window for treating pancreatic cancer patients.

## Biography

**Min-Sik Lee** is an Assistant Professor in the Department of Life Sciences at Pohang University of Science and Technology (POSTECH), South Korea. He earned his Ph.D. from Yonsei University, followed by postdoctoral research at Yonsei University and Harvard Medical School's Boston Children's Hospital. Dr. Lee's research focuses on cancer metabolism and the tumor microenvironment, particularly in pancreatic ductal adenocarcinoma (PDAC). His work has provided insights into the metabolic adaptations of PDAC cells, including the role of ornithine aminotransferase in polyamine synthesis and tumor growth. Dr. Lee has co-authored several publications in high-impact journals such as Nature and PNAS. At POSTECH, he leads a research group dedicated to understanding the metabolic behaviors of cancer cells to inform the development of targeted therapies.

C2P FORUM
CONNECT TO PEOPLE
European
Hematology and Blood Disorders Congress
April 14-15, 2025 | Rome, Italy

# IMPORTANCE OF ORAL HEALTH AND CARE IN ORAL CANCER SURVIVORS

**Gaurav Vishal**
*Prathima Cancer Institute, India*

## Abstract

Almost all of the cancers in the oral cavity are squamous cell carcinomas. Oral squamous cell carcinoma is a global health problem. Oral cavity and lip cancers account for 377,713 new cancer cases and 177,757 deaths per year around the world (**Globocan 2020**). As compared to the developed countries, the load of oral cancer is significantly greater in developing countries mainly due to chewing and tobacco smoking, betel-quid chewing, excessive alcohol consumption, and unhygienic oral condition. Oral squamous cell carcinoma is treated primarily by surgery followed by adjuvant therapy, depending upon the stage (early and advanced) and histopathological characteristics. Oral and dental health can be severely compromised during the cancer therapy such as surgery and radiotherapy. Hence there is a great need to focus on oral health and care in oral cancer survivors. Oral health plays an important role in the quality of life, dental problems like loose crowns or faulty restorations, traumatized teeth and periodontal diseases can get worse during the oral cancer treatment. If dental problems are treated prior cancer therapy, the oral complications may be milder or less severe. Time must be made accessible during the pretreatment phase for a dental evaluation and essential emergency care, particularly when radiotherapy is planned and for those where dental treatment may be contraindicated once oncology intervention starts. So, the dental assessment is advisable one month before cancer treatment begins. Oral complications related with cancer therapy are frequent. Early complications comprise oral mucositis, dysgeusia, xerostomia and dysphagia. Late complications comprise hyposalivation, trismus, dysphagia and osteoradionecrosis. Therefore, the aim of this paper is to spread awareness about the complete oral health and dental Care before, during and after the cancer therapy and to diminish or prevent the potentially devastating side effects such as xerostomia, trismus, oral mucositis, dysphagia, osteoradionecrosis etc and help to maintain the highest possible overall well-being of cancer survivors.

## Biography

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

# DAY - 1
# E-Poster

C2P FORUM
CONNECT TO PEOPLE
European
Hematology and Blood Disorders Congress
April 14-15, 2025 | Rome, Italy

# ASSOCIATION OF HEMOGLOBIN TO RED BLOOD CELL DISTRIBUTION WIDTH RATIO WITH MORTALITY AFTER CORONARY ARTERY BYPASS GRAFTING

**Bufan Zhang and Naishi Wu**
*Tianjin Medical University General Hospital, China*

## Abstract

**Objective:** Red blood cell distribution width (RDW) was previously used to diagnose hematological diseases. Hemoglobin to RDW ratio (HRR) has been regarded as an innovative biomarker of inflammation. This study aims to explore the association between HRR with mortality in patients after coronary artery bypass grafting (CABG).

**Methods:** Data on patients who underwent CABG from January 1, 2021, to July 31, 2022, were retrospectively collected. The locally weighted scatter plot smoothing (Lowess) method was utilized to display the crude association between HRR and in-hospital mortality. The cut-off value (8.0882) of HRR was calculated using the Youden index method. The primary outcome was in-hospital mortality.

**Results:** In total, 1,258 patients were included. The Lowess curve showed an approximate negative linear relationship between HRR and in-hospital mortality. In the multivariable logistic regression model, HRR was an independent predictor (odds ratio [OR] = 0.74, 95% confidence interval [CI] 0.58-0.95, p = 0.019) for in-hospital mortality after CABG. The receiver operating characteristic curve showed that HRR displayed great discrimination. The cut-off value (8.0882) of HRR was calculated for further analysis, and groups were further divided into the high HRR group (≥ 8.0882) and the low HRR group (< 8.0882). In the multivariable logistic regression model, high HRR (≥ 8.0882) correlated with a reduced risk of in-hospital mortality (OR = 0.26 95% CI 0.13-0.53, p < 0.001) and one-year mortality (OR = 0.27, 95% CI 0.14-0.51, p < 0.001) after adjusting for all included covariates. Besides, the Kaplan-Meier survival curve displayed that patients with high HRR showed a better one-year survival rate than those with low HRR (p < 0.001).

**Conclusion:** Preoperative HRR is an independent predictor for in-hospital mortality and one-year mortality, which can be utilized to assess the prognosis and further provide guidance for the treatment in patients following CABG.

## Biography

**Bufan Zhang** is currently studying for his PhD at Tianjin Medical University General Hospital. He received clinical training at the TEDA International Cardiovascular Hospital and got a master's degree from Tianjin Medical University.

C2P FORUM
CONNECT TO PEOPLE
European
Hematology and Blood Disorders Congress
April 14-15, 2025 | Rome, Italy

# HEMOSTATIC EFFECT OF 3D-PRINTED HIP FIXATORS IN CHILDREN WITH RETINOBLASTOMA AFTER INTRA-ARTERIAL CHEMOTHERAPY: A NON-RANDOMIZED CONTROLLED TRIAL

**Lili Hou[1], Changjuan Zeng[2], Yifan Wu[2] and Na Du[1]**
[1]*Shanghai Jiao Tong University School of Medicine, China*
[2]*Shanghai Jiao Tong University School of Nursing, China*

## Abstract

**Objectives:** This study aimed to investigate the benefits of using three-dimensional (3D)-printed hip joint fixators after intra-arterial chemotherapy (IAC) by inguinal femoral artery puncture in children with retinoblastoma.

**Methods:** 79 cases of retinoblastoma who had undergone IAC through the femoral artery were selected and divided into an observation group of 50 cases and an intervention group of 29 cases according to the hemostasis method employed. The patients in the observation group were treated with sandbags for hemostasis, while those in the intervention group were given 3D-printed hip joint fixators to help immobilize the hips and sandbags. We used the Face, Legs, Activity, Cry and Consolability scale (FLACC), the Wong–Baker Facial Expression Pain Scale, and self-made questionnaires to evaluate demographics, clinical characteristics, pain, complications, satisfaction, and other indicators of the two groups.

**Results:** There were no significant differences in general data, such as age, gender, height, weight, manual compression time, diseased eye, tumor stage, platelet count, puncture times, pain distribution, and total score, between the groups. There was a positive correlation between FLACC pain and the total Wong–Baker pain score ($r=0.599$, $p<0.001$). During the 2 h of sandbag compression, sandbags were dislodged in the observation group as many as ten times, which was significantly higher than that in the intervention group (up to four times; $p<0.001$). This was correlated with a very high score of satisfaction (92.34±19.96 out of 100).

**Conclusion:** The 3D-printed hip fixator is easy to operate, has a low incidence of complications, and saves time and effort. It effectively reduces the incidence of sandbags falling off after IAC in children with retinoblastoma and does not increase the patient's pain. It is a method that could improve hemostasis in young children undergoing IAC by inguinal femoral artery.

## Biography

**Lili Hou** is a professor and chief nurse with 25 years of experience in nursing, specializing in cancer care and nursing management. She has contributed significantly to the field through her research and publications, including a study on transcutaneous electrical acupoint stimulation (TEAS) ameliorating chemotherapy-induced bone marrow suppression in lung cancer patients. Hou has also been involved in meta-analyses focusing on non-pharmacological interventions for dysgeusia in patients undergoing radiotherapy for head and neck squamous cell carcinoma. Her dedication to advancing oncology nursing is evident through her extensive body of work and commitment to improving patient outcomes.

C2P FORUM
CONNECT TO PEOPLE
European
Hematology and Blood Disorders Congress
April 14-15, 2025 | Rome, Italy

# ADAMTS13 LABORATORY TEST IN PATIENTS WITH SUSPICION OF THROMBOTIC THROMBOCYTOPENIC PURPURA, "ANNUNZIATA" A.H. (CS, ITALY), YEARS 2020-2024

**Livia Bernardi, Francesco Zinno, Dario Terzi, Daniela Mazzuca, Gessica Medaglia, Simona Rende, Carmen Sansosti, Teresa Bartolillo, Francesca Sinopoli, Stefania Filice, Giuseppina Furgiuele, Marianna Puzzo, Cinzia Giordano, Ernesto Vigna, Massimo Gentile and Stefania Catalano**

*Annunziata Hospital, Italy*

## Abstract

**Introduction:** Thrombotic thrombocytopenic purpura (TTP) is a rare disorder characterized by thrombocytopenia and microangiopathic hemolytic anemia, and very high-mortality rate (90%) in untreated patients. Severe ADAMTS13 deficiency (activity <10%) leads to accumulation of large von Willebrand Factor multimers, resulting in occlusive microvascular thrombi. TTP occurs either congenitally (cTTP, autosomal recessive), or as an acquired event (aTTP), due to development of anti-ADAMTS13 antibodies. Therapeutic plasma exchange (TPE) remains highly effective therapy; it is often used in conjunction with other therapies including corticosteroids, caplacizumab and rituximab. We report a retrospective study of individuals, admitted between 1 January 2020 to 31 December 2024, to "Annunziata" Hospital (CS, Italy), affected by thrombotic microangiopathy (TMA), with ADAMTS13 activity assessment.

**Methods:** A total of 95 patients were screened for ADAMTS13 testing (66% female, mean age at the first acute episode 55.2 ± 21.6 years, range 3-93; 34% male, mean age at the first acute episode 55.0 ± 20.5 years, range 1-84). Diagnosis was performed by integrating clinical information with laboratory results (blood count, schistocytes, elevated LDH, haptoglobin, serum bilirubin etc.). Plasma ADAMTS13 activity was determined using ELISA chromogenic test "Technozym Adamts13 activity" (Technoclone).

**Results:** Of the 95 analysed patients, 29 (31%), mean age 61.2 ± 16.3 years, range 24-93, 72% female, presented with low ADAMTS13 activity; of those, 48% resulted with ADAMTS13 activity <10% (<0.1 IU/mL) (N=12 females, 86%, age range 24-75; N=2 males, age range 35-39 years). Persistently low plasma ADAMTS13 activity was observed in 38% of the patients (N=11); of those, 6 patients (55%) showed the course of relapsing TTP. All subjects with ADAMTS13 activity <10% (TTP diagnosis) were referred for TPE (one plasma exchange procedure/day, until

## Biography

**Livia Bernardi** has her greatest expertise in Molecular Biology of tumors and neurodegenerative diseases (from the year 2003 to the year 2019). Her publications from the year 2006 to the year 2023 focus on neurodegenerative diseases, such as Alzheimer's disease, Frontotemporal dementia, Prion protein disease, Spinocerebellar ataxias, Cadasil, Parkinson's disease. Very recently, she began to study Hematology and diseases related to coagulation, in particular the Thrombotic microangiopathy and Thrombotic thrombocytopenic purpura (TTP). Her approach is both biochemical and genetic, aiming to develop in her laboratory the genetic analysis using Next Generation Sequencing (NGS) methodology in patients affected by TTP, to search for ADAMTS13 gene mutations in hereditary TTP.

platelet and LDH value normalization). No deaths were documented from TTP-related mortality.

**Conclusions:** Availability of ADAMTS13 testing is very effective in supporting a timely diagnosis of TTP and in allowing rapid use of life-saving therapy. Unfortunately, to date, these tests are not achievable in a homogeneous way throughout the national territory. The creation of a TTP registry in Calabria could constitute a valid tool to optimize identification and management of patients with TTP.

C2P FORUM
CONNECT TO PEOPLE
European
Hematology and Blood Disorders Congress
April 14-15, 2025 | Rome, Italy

# EDIBLE AND INJECTABLE LIQUID PLASMA MEDICINE FOR THE TREATMENT OF ALL TYPES OF CANCERS

**Tahereh Safari**
*Arta Nano Biophysics Company, Iran*

## Abstract

Water is activated by plasma, a new type of water that is free of chemicals, salt and harmful processes, which is called plasma-activated water (PAW), which is produced by the activation of water under the influence of plasma. In this article, we have investigated the effect of the drug prepared by the plasma method on cancer cells in a laboratory culture environment and on cancer mice, and the results were very successful and excellent. In cell culture, the effect of plasma water on the cell line Human Leukemia K562 When K562 cells were in the proliferative phase, the results indicated that our produced plasma liquid drug destroyed the cancer cells, so that with a volume percentage of 0.7 or higher, the cancer cells were killed by 99%. destroyed, this means that the effectiveness of this drug is more lethal than the strongest cancer drug Cisplatin on cancer cells; on the other hand, it does not harm healthy cells. This drug did not show any side effects, especially on liver enzymes, which proves that this liquid plasma is safe. this amount did not have any adverse effect on liver enzymes and on the other hand, it caused the recovery of sick animals. In another experiment performed on cancer mice, Balb/C mice (30 females) were injected subcutaneously with breast cancer cells (4T1), which is highly metastatic. group (subcutaneous injection near the tumour). The results of this test were also excellent and satisfactory. In subcutaneous injection, the size of the tumors remained constant and there was no increase in size. In intravenous injection, the growth of tumour size was stopped and then decreased significantly. The situation has been the same in the oral form of the drug.

## Biography

**Tahereh Safari** has a Master's Degree in Solid State Physics and has been researching fuel cells since 2002. She has written many articles on fuel cells and presented at conferences in her country. In 2005, she wrote an article entitled, "Proton membrane electrolyte" for the International Conference in Nevada, USA, Las Vegas, chosen as the distinguished conference paper. Her undergraduate thesis was on renewable energies and types of fuel cells, and her Master's thesis was on the study of thermodynamic parameters in biofuel cells. She has completed a course at the virtual Medical Biotechnology Research Institute in Tehran. She has three patents on fuel cells and a book on clean energy and fuel cells that are being submitted. She is interested in researching fuel cells, especially its bio-type. She filed a provisional patent in the United States for an anti-cancer drug. Currently pursuing permanent registration, which is under review and expected to take a minimum of two years. Also filed under the PCT (Patent Cooperation Treaty) and registered domestically in Iran, with all applications currently under review. She registered a domestic patent in Iran for a medical bio-battery designed for implantation in humans, functioning as a heart battery. Currently under review in Iran, with U.S. registration in progress. All applications have assigned application numbers. She is in the process of registering a topical ointment designed for the treatment of cancer-related wounds, diabetic ulcers, and chronically infected wounds in Iran. Currently under review.

# Accepted Abstracts

C2P FORUM
CONNECT TO PEOPLE
European
Hematology and Blood Disorders Congress
April 14-15, 2025 | Rome, Italy

# MACHINE LEARNING, BIO-MODELING AND MEDICAL IMAGE PROCESSING IN PREDICTION OF METASTASES IN LUNG CANCER

**A Swierniak[1], K Fujarewicz[1], J Smieja, D Borys[1], K Psiuk-Maksymowicz[1], A Wilk, E Kozlowska[1], A d'Amico[2] and R Suwinski[2]**

*[1]Silesian University of Technology, Gliwice, Poland*
*[2]National Research Institute of Oncology, Poland*

## Abstract

The main goal of the project was to develop original models and methods, which would support analysis of clinical and imaging data and aim at better prediction of spread and colonization of tumor cells to distant organs, with emphasis on the most common subtype of lung cancer, non-small-cell lung carcinoma (NSCLC). Lung cancer is one of the most frequent tumors and mortality caused by it belongs to the highest ones. More than 85 % of lung cancer patients have NSCLC. The advanced lung cancer leads to distant metastases and the metastatic tumor is mainly incurable, due to its resistance to treatment. It makes tumor metastases the main reason of patients' death. Distant metastases (distant cancer) refer to cancers that have spread via blood or lymphatic vessels from the original location (the primary tumor) to distant organs or lymph nodes. To reach the goal we have analyzed original (created in the project) and modified (based on existing in literature) models of cancer growth enabling prediction of appearance and emergence of distant metastases taking into account both standard (radio-chemotherapy) and non-standard (immunotherapy, targeted therapies) treatment modalities. We have chosen such models which have good prediction features and, on the other hand, are simple enough to be the base of hybrid modeling which enables using machine learning tools for individualized parameter estimation and in the same time could be used to generate recommendations for clinical treatment and its effects. We have constructed original methods of preprocessing and biomedical image analysis allowing for extraction and selection of radiomic features which could be used in patient classification (long/short metastases free time), search for biomarkers of metastases emergence and effects of therapy, and inputs for machine learning algorithms. We have proposed and tested novel techniques of machine learning based on data coming from different sources: clinical, radiomic, genetic, proteomic. One of the proposed approaches, called individualized modelling, is a compromise between model building based on common data and constructing models for separated groups. Yet another proposal

## Biography

**Andrzej Świerniak** is a distinguished professor at the Silesian University of Technology, specializing in systems engineering, systems biology, control theory, and bioinformatics. He holds MSc degrees in Control Engineering and Mathematics, a PhD in Control Engineering, and a state professorship in technical sciences. A co-founder of the Biotechnology field at SUT, he has lectured internationally and supervised numerous doctoral theses. His research focuses on optimization in anticancer therapy, uncertainty modeling, and applications of system theory in genomics. With over 450 publications, multiple research grants, and editorial roles, he is a recognized leader in his field. He has received numerous national and international honors, including the Polonia Restituta Officer's Cross and IEEE Senior Membership. Prof. Świerniak has extensive international collaborations, serving as a visiting professor at institutions such as Oxford University and Ohio State University, and actively contributes to scientific committees and editorial boards worldwide.

developed in the project is a novel approach to use multiple regions of interest in prediction of metastasis by its aggregation or risk aggregation algorithms. The aim of all these tools is to overcome difficulties related to heterogeneity of different types of objects (patients, cell populations, phenotypes) and/or data structures (data from different modalities, different sources, different focusing of images). Heterogeneity of populations and phenotypes has motivated us to propose new algorithms of evolutionary games used for modelling an effect of cell interaction leading to tumor cells migration and colonization of distant organs, and their implementation. Since in the problem of tumor dissemination and colonization of local lymph nodes and distant organs spatial dependencies between cells representing different phenotypes and their movement are crucial in analysis, the mean field approach has been treated only as the primary but crucial step leading to construction and analysis of spatial evolutionary games based on cellular automata and agent-based systems. The observation that the behavior of individual tumor cells is rather a mixture of features, which have been treated as strategies in the game theoretic model mentioned above led us to yet another type of games which we have called Mixed Spatial Evolutionary Games. Moreover, we have designed software which enables simulation of both 2D and 3D spatial structures that, in our opinion, is an exception rather than a rule in literature devoted to simulations of spatial evolutionary games. The project has included interdisciplinary research employing methods from machine learning, data analysis, biomathematical modeling, image processing, bioinformatics and systems biology, with strong support from clinical and biomedical images data. It has provided a new framework of data integration and analysis and novel algorithms which have supported interdisciplinary research related not only with lung cancer but also with other biomedical problems (other cancers, epidemiology, neurology). As usually, the secondary goal of the project was scientific development of its investigators. This goal has been also reached in the form of PhD and habilitation degrees obtained by investigators and scholarships of our young researchers granted based mainly on results achieved or motivated by the project.

European
Hematology and Blood Disorders Congress
April 14-15, 2025 | Rome, Italy

# CARE ON SOCIAL NETWORKS: A DIGITAL OBSERVATORY FOR PATIENTS AND CAREGIVERS THE CASE OF GLIOBLASTOMA IN FRANCE AND THE USA

**Berthelot-Guiet Karine**
*Sorbonne Université, France*

## Abstract

As part of the CURAMUS-SIRIC (Integrated Interdisciplinary Cancer Research Site) program at Sorbonne Université - AP HP Pitié Salpêtrière, we have developed research in communication and social sciences focusing on rare neurological, blood, and MSI cancers since 2017. Taking full charge of the Latin verb “curamus, “which means "we cure" and "we care," we have explored the expertise of patients and associations while examining inequalities and vulnerabilities linked to geography, gender, generation, and social factors. Our aim has been to uncover where and how the language of care, beyond that of medical teams, is produced and exchanged, particularly when conditions like glioblastoma place patients and caregivers in a state of high urgency. Additionally, we have researched the online expressions of patients and their families on social media. During this online observatory, we gain insights through repeated semiotic and communicative analyses of asynchronous forums, Instagram, Facebook, and TikTok. The various forms and formats of care for this cancer enable us to understand specific aspects of the language surrounding shared care. The following points have emerged over the years from diverse corpora: - The significant role of intertextuality among these editorial devices fosters "collectives of individuals," where people find meaning through the "neighborhood" on social networks, ultimately homogenizing both expression and representation. - The figures and forms of mutual support among caregivers bridge gaps in knowledge and information, facilitating the exchange of advice on navigating the extraordinary challenges of daily illness. - These digital devices are "techniques of the self" (Foucault), providing care for patients and caregivers. Social networks offer a "place" for compensatory expression of lay experiential expertise. -These processes of gaining recognition and authorization position caregivers as creators of languages of care.

## Biography

She is a Full Professor at CELSA Sorbonne Université, the School for Higher Studies in Communication and Journalism, and a member of the GRIPIC laboratory. Her specialization is in linguistics, focusing on discourse, semiotics, and communication studies, where she analyzes communication across extensive corpora. Her research emphasizes market mediation, various forms of advertising, and the brand as a communicative entity. Since 2017, she has also directed research in the human and social sciences as part of CURAMUS-SIRIC (Integrated Interdisciplinary Cancer Research Site) at Sorbonne Université, AP-HP Pitié Salpêtrière —INCA-INSERM.

European
Hematology and Blood Disorders Congress
April 14-15, 2025 | Rome, Italy

# THE IMPACT OF SOCIAL MARKETING-BASED INTERVENTION ON EDUCATING ESOPHAGEAL CANCER PREVENTIVE BEHAVIORS

**Davoud Shojaeizadeh, Nahid Ghorbanzadeh Shabestari and Motahareh Shojaeizade**
*Tehran University of Medical Sciences, Iran*

## Abstract

Esophageal cancer is one of the most widespread disease in Golestan Province, Iran. To identify risk factors a lot of research has been done. Because health workers have successful experiences of health education. The purpose of this study is to use social marketing to influence health workers in order to educate cancer prevention contents. A qualitative study was conducted. The process has been done through Focus Group Discussion that includes six meetings to extract the health worker's opinions. A questionnaire was developed to assesses knowledge, self – efficacy and behavior. The findings the study indicated that there was significant difference between interventional group and control group in behaviors. The Paired T-Test results showed that after intervention there was positive behavioral change in groups. The findings of the study indicated that the apparent increase in Mean Scores in intervention group is significant. Analysis of Covariance was used to Mitigate the effects of variable Pre-test. The Mean of knowledge, attitude, self-efficacy and behaviors of health workers in intervention group

## Biography

**Davoud Shojaeizadeh** have completed my PhD at the age of 35 years from Liverpool University, School of Tropical Medicine in UK. I am faculty member of Tehran University of Medical Sciences and full professor in health education and health promotion. I am published more than 55 papers in reputed journals and has been serving as an editorial board member of repute. I also published 37 books.

C2P FORUM
CONNECT TO PEOPLE
European
Hematology and Blood Disorders Congress
April 14-15, 2025 | Rome, Italy

# INVESTIGATION OF VARIOUS KETOGENIC DIET FORMULATIONS IN DROSOPHILA MELANOGASTER MODEL AT THE PRUNE GENE EXPRESSION LEVEL IN BREAST CANCER

**Esma Yorulmaz and Fatma Kübra Ata**
*İstanbul Health and Technology University, Turkey*

## Abstract

The World Health Organization identifies cancer as one of the greatest burdens on public health. Multiple scientific approaches are needed to understand disease etiology. One of these approaches is to identify treatments in less complex but similar organisms. Undoubtedly, the fruit fly Drosophila melanogaster, which has similar genetic homology to humans, is the first organism of choice for modeling cancer diseases. Although cancer is kept under control with many treatment methods, medical nutrition therapies have come to the forefront in recent years. One of these treatment methods is the ketogenic diet. Studies have shown that ketogenic diet therapy will be an anticancer factor that controls tumor growth in cancer patients. Ketogenic diet therapy has shown more positive effects especially in patients with advanced metastatic cancer and regression in cancer stage has been observed. In the project, it was aimed to suppress the Prune (prune exopolyphosphatase) gene, which causes metastasis in human breast cancer patients and is also found in D. melanogaster. In this context, various ketogenic diet formulations were applied on D. melanogaster organism. The ketogenic diets determined in the BeBIS program were named Frm-1 and Frm-2. RNA was isolated from adult Drosophila fed Frm-1 and Frm-2. At optical density, absorbance values at 260 nm and 280 nm were ratioed to determine the concentration and purity of the total DNA and RNA samples isolated. The isolated single-stranded mRNA was converted into double-stranded complementary cDNA. Reverse transcriptase polymerase chain reaction (RT-PCR) assay was performed to determine the gene expression level of the obtained cDNAs. As a result of gene expression analysis, a significant difference was obtained in Frm-1 and Frm-2 prune gene expression compared to the control group and the experiment was successfully completed.

## Biography

**Esma Yorulmaz** is a nutritionist and molecular biologist with degrees in molecular biology and genetics, as well as nutrition and dietetics. She specializes in research using Drosophila melanogaster to study breast cancer and aging. With a strong passion for scientific research and laboratory work, Esma is dedicated to uncovering new insights in these fields. Her ultimate goal is to share her discoveries with others and to help improve the health and well-being of her patients. Combining her expertise in science and nutrition, she strives to make a positive impact on both individual and public health.

European
Hematology and Blood Disorders Congress
April 14-15, 2025 | Rome, Italy

# DISPARITIES IN ONCOLOGY: THE SHADOW OF ONCOLOGICAL CLINICAL ADVANCEMENTS

**Folinas Konstantinos[1], Alevizopoulos Nektarios[1], Tego Theodoros[1] and Apostolopoulou Valentina[2]**

[1]*Evaggelismos General Hospital, Greece*
[2]*NMITS Hospital, Greece*

## Abstract

Oncology has entered the era of pharmacogenomics and that of an individualized targeted approach towards the therapeutic algorithm.This approach consists of the integration of Artificial Intelligence (AI) to better identify cancer patients,of biomarkers in order to identify the patients that will respond to a certain schema (via certain tests) or other advancements that will be implemented in the near future. All these advancements change radically the therapeutic approach towards cancerous neoplasms but are not compensated (at all or at a minor percentage from the budget of every country).This situation protrudes an inequity between certain socioeconomical classes(that do not have the economical resources to undergo expensive tests , diagnostic methods, or/and expensive treatments),races (that do not have the facilities to visit seeking diagnosis of a mass or treatment of an already staged carcinoma) .These disparities ,as there were characterised, divide cancer patients to those that can afford the new,very promising ,effective with less adverse events and those who cannot afford this economic burden. All in all, we can conclude that the guidelines of the oncologic organizations is an ideal everyday oncologic practice for those fortunate few and not for everyone. So oncology in the recent years is a specialty that focuses into improving and advancing the therapeutic algorithm rather than integrating more patients to it.

## Biography

**Kostas Folinas,** MD, MSc, is a dedicated medical oncologist currently serving as a specialist at Evaggelismos General Hospital since December 2023. With a commitment to providing comprehensive cancer care, Dr. Folinas is poised to advance his expertise further by transitioning to Ippokrateion General Hospital in the coming months, where he will assume the role of consultant medical oncologist. His professional journey reflects a steadfast dedication to oncology and patient-centered treatment.

C2P FORUM
CONNECT TO PEOPLE
European
Hematology and Blood Disorders Congress
April 14-15, 2025 | Rome, Italy

# PROTECTIVE EFFECTS OF UMBILICAL CORD MESENCHYMAL STEM CELLS ON OBSTETRIC DEEP VENOUS THROMBOSIS VIA REDUCING THE FERROPTOSIS OF ENDOTHELIAL CELLS

**Junrong Zhang, Xi Chen, Baolan Sun and Yuquan Zhang**
*Medical School of Nantong University, China*

## Abstract

The objective of the current investigation is to explore the role of ferroptosis in mediating the protective effects associated with umbilical cord mesenchymal stem cells (UCMSCs) on obstetric deep venous thrombosis (DVT) in vivo and in vitro. A pregnant rat model of deep vein thrombosis (DVT) was created through the application of a "stenosis" technique targeting the inferior vena cava (IVC). Furthermore, the protective effects of UCMSCs were evaluated on pregnant rats with DVT and impaired endothelial cells. Subsequently, transcriptome sequencing was utilized to pinpoint the genes that exhibited differential expression in the thrombosed inferior vena cava (IVC) tissues of rats belonging to both the deep vein thrombosis (DVT) and umbilical cord mesenchymal stem cells (UCMSC) groups. Finally, the role of the candidate gene was demonstrated. The administration of UCMSCs into pregnant rats diagnosed with DVT notably led to a greater degree of angiogenesis, alleviated coagulation, inflammation, and ferroptosis, and ameliorated the pregnancy outcomes. In vitro, erastin induced typical features related to ferroptosis. UCMSC-conditioned medium (UC-CM) effectively enhanced the capacity of dysfunctional endothelial cells to undergo proliferation, migration, invasion, and the formation of vessel-like structures, and normalized the levels of reactive oxygen species and malondialdehyde. The analysis of KEGG pathway enrichment revealed that the signaling pathway associated with ferroptosis in the thrombosed tissues of rats in the UCMSC group markedly suppressed. The levels of arachidonate-15-lipoxygenase (ALOX15), a marker related to ferroptosis, was significantly downregulated in both thrombosed tissues and endothelial cells sorted out from these tissues after UCMSC transplantation. Furthermore, the function of ALOX15 was verified in vitro. In conclusion, this study suggested that UCMSCs mitigated the inflammation levels, facilitated recanalization, and improved pregnancy outcomes in cases of obstetric DVT by mitigating ferroptosis within endothelial cells.

## Biography

**Zhang Junrong,** female, PhD student of Nantong University, is now working in the obstetrics and Gynecology department of the Affiliated Hospital of Nantong University. He is now engaged in basic and clinical related research on venous thromboembolism in obstetrics and gynecology.

C2P FORUM
CONNECT TO PEOPLE
European
Hematology and Blood Disorders Congress
April 14-15, 2025 | Rome, Italy

# PREVENTION OF POSTOPERATIVE PANCREATIC FISTULA AND OTHER COMPLICATIONS IN PATIENTS WITH PANCREATIC AND PERIAMPULLARY REGION CANCER FOLLOWING PANCREATODUODENECTOMY

**Liudmyla Pererva[1], Volodymyr Kopchak[1], Volodymyr Trachuk[1] and Zlata Holobor[4]**

*[1]Shalimov National Scientific Center of Surgery and Transplantology, Ukraine*
*[2]National Medical University, Ukraine*

## Abstract

**Introduction:** The incidence of postoperative pancreatic fistula (POPF) and other postoperative complications after pancreatoduodenectomy remains high. The aim of this study was to develop surgical tactics to prevent the occurrence of POPF and other postoperative complications following pancreatoduodenectomy.

**Method:** A retrospective analysis of the surgical treatment of 620 patients with pancreatic and periampullary region cancer after pancreatoduodenectomy between January 2010 and January 2023 was conducted. Since December 2018, new approaches have been implemented in our department directed to prevent the occurrence of POPF and other complications.

We evaluated the presence of sarcopenia before surgery and provided nutritional support to patients with sarcopenia. During surgery we used our modification of the pancreatic fistula risk score, which assesses pancreatic texture (firm or soft) according to the pathologist's definition of pancreatic fibrosis degree and our surgical tactics depending on the pancreatic fistula risk. In cases with a high risk of POPF invaginated pancreaticojejunostomy with external pancreatic stent was performed, in patients with intermediate risk - invaginated duct to mucosa pancreaticojejunostomy, in low-risk patients the technique of pancreaticojejunostomy was considered by the operating surgeon. We performed early removal of abdominal drains in patients with low risk of POPF and omissing of nasogastric tube and enteral tube for enteral nutrition. In patients with high risk we used nasogastric tube and enteral tube for enteral nutrition, we used late drain removal, after 9 p/o days if was negative amylase content and in this group we tried to identify postoperative complications before they become clinically relevant and treat them with maximum use of minimally invasive technologies.

Proposed tactics were applied to 264 patients in the main group.

## Biography

**Liudmyla Pererva,** M.D., Ph.D., serves as an Assistant Professor and Senior Researcher in the Department of Pancreatic and Bile Ducts Surgery at the A.A. Shalimov National Institute of Surgery and Transplantology in Kyiv, Ukraine. With a distinguished career in pancreatic surgery, Dr. Pererva has contributed significantly to advancing surgical techniques and patient care.

The comparison group consisted of 356 patients between January 2015 and November 2018, without assessing the risk of pancreatic fistula, presence of sarcopenia and use of proposed tactics. These groups were comparable by gender, tumor location, stage of the disease, presence of concomitant pathology, number of extended pancreatic resections.

**Results:** In the main group POPF grade B or C was occurred in 26 patients (9.8%), in the comparison group - in 85 (23.9%) patients ($\chi = 20.3$, $p = 0.0001$). In the main group postoperative complications were occurred in 86 patients (32.6%) while in the comparison group – in 148 (41.6%) patients ($\chi = 5.2$, $p=0.02$). The mortality rate in the main group was 1.1% (3/264), in the comparison group 2.2% (8/356), ($\chi = 1.07$, $p=0.3$).

**Conclusion:** The surgical tactics developed to prevent postoperative pancreatic fistula after pancreatoduodenectomy were found to significantly reduce of POPF occurrence from 23.9% to 9.8%, postoperative complications from 41.6% to 32.6%, and mortality from 2.2% to 1.1%.

European
Hematology and Blood Disorders Congress
April 14-15, 2025 | Rome, Italy

# PREOPERATIVE ULTRASOUND-GUIDED MARKING, MAMMOGRAM, AND PREOPERATIVE USE OF IMAGE INTENSIFIER: A COST-EFFECTIVE TECHNIQUE IN CLIPPED NON-PALPABLE BREAST CANCER LESIONS TO ACHIEVE ADEQUATE SURGICAL MARGINS

**Amna Masud[1], Huma Majeed Khan[1], Eisha Tahir[2], Anam Waseem[1], Hafsa Ahmed[1] and Rabia Ikram[3]**

*[1]Ittefaq Hospital Trust, Pakistan*
*[2]Shalamar Hospital, Pakistan*
*[3]Rashid Lateef Medical College, Pakistan*

## Abstract

With economic/resource restraints, in a world of increasing technology and cost associated with it, the need to find cost effective ways without compromising patient outcomes and care, became a challenge. We developed a simple but effective way of dealing with the situation. Localisation and removal of impalpable target lesions is possible without compromising patient safety in a resource-limited setup using preoperative ultrasound and mammography with per-operative use of C-arm (image intensifier). We analysed the data of all eligible patients in the Department of Breast Surgery, Ittefaq Hospital (Trust), Lahore, Pakistan, from 25th October 2011 to 17th February 2023.

The primary outcome was the accurate localisation and removal of the index lesion, while the secondary outcome included the reoperation rate for positive margins and early local recurrence.

**Results:** Data from 144 patients were reviewed. Successful localisation was done in all the patients; only one patient had a positive margin for ductal carcinoma-in situ (DCIS), achieving a 99.3% clear margin rate. Local recurrence within two years after primary operation was seen in one patient only.

**Conclusion:** By a combined approach of preoperative ultrasound-guided marking, a 2-view mammogram, and the use of image intensifier, successful localisation of an impalpable breast lesion is possible without compromising oncological and aesthetic principles.

## Biography

**Huma Majeed Khan** graduated from King Edward Medical College, Lahore, Pakistan in 1987. She acquired training in General Surgery with a special interest in Breast surgery in the United Kingdom and in Pakistan. She got her fellowship, FRCS(Ed), from the Royal College of Surgeons and Physicians, UK. With a commitment to provide services to women in Pakistan with a high prevalence of breast cancer and delayed presentation due to economic and cultural factors, she returned home and started dedicated breast service in Lahore Pakistan since 2001. Now the department is accredited by College of Physicians and Surgeons of Pakistan for a second fellowship in breast surgery as a supra specialty. The aim and struggle of her work is to juggle resource constraint and standard of care. She also worked at the Shaukat Khanum Memorial Cancer Hospital and Research Centre Lahore for almost a decade, which is a tertiary cancer care facility of international standards. She is also a co-author of local guidelines on breast cancer management and has been involved in clinical research and publications.

C2P FORUM
CONNECT TO PEOPLE
European
Hematology and Blood Disorders Congress
April 14-15, 2025 | Rome, Italy

# CHARACTERIZATION OF EARLY-PHASE CLINICAL TRIALS FOR GENE THERAPIES IN HEMOPHILIA A: REVIEW STUDY

**Manal F. Almutairi**
*Saudi Food & Drug Authority, Saudi Arabia*

## Abstract

**Introduction:** No previous studies have comprehensively characterized the design of gene therapy trials for Hemophilia A. Therefore, this study aims to evaluate and characterize early-phase clinical trials in Hemophilia A.

**Methods:** A comprehensive search on ClinicalTrials.gov was conducted to identify studies focused on gene therapy for Hemophilia A. Trials were included if they were FDA-regulated, in Early Phase or Phase I, and met broad eligibility criteria. Studies related to Hemophilia B, non-FDA-regulated trials, or those involving monoclonal antibody interventions were excluded. Additional data were sourced from PubMed and Google Scholar to supplement the findings. The selected studies were evaluated for safety, efficacy, and regulatory compliance in accordance with U.S. FDA guidelines. This is a descriptive study; no statistical analysis was required.

**Results:** Of 33 studies, only 16 met our inclusion criteria. The design of the studies was a single-arm, open-label trial. In the later phases (II/III), patients served as their own control.

The primary objectives of the studies were to assess safety, tolerability, and to establish optimal dosing. All studies included adult male patients due to the nature of hemophilia A, an

X-linked disorder where females are typically carriers and rarely develop the disease. Patients with severe or moderately severe hemophilia A (FVIII activity ≤ 1 to 2 IU/dL) were eligible for inclusion. The inclusion criteria were:

- No history of FVIII inhibitors, although patients with a history of inhibitors were also considered for later inclusion.
- No detectable neutralizing immunity against the viral vector, a neutralizing antibody titer of 1:5 or lower was considered acceptable for participation.

The primary endpoints included the number of adverse events (AEs), serious adverse events (SAEs), and hepatic side effects. The secondary endpoints were changes in FVIII activity levels from baseline, annualized FVIII consumption, and the annualized bleeding rate (ABR) over a 12-month period.

## Biography

**Manal F. Almutairi** is a senior expert clinical evaluator with extensive experience in clinical practice, epidemiology, pharmacovigilance, and regulatory affairs. She currently serves as a Senior Scientific Evaluation Expert in the Oncology Hematology Efficacy and Safety Department at the Saudi Food and Drug Authority (SFDA), where she leads clinical evaluations for oncology, hematology, and other therapeutic areas.

**Discussion/Conclusion:** All studies followed a similar design, focusing on safety, tolerability, and dose-finding in adult males with severe hemophilia A. However, this study uniquely included patients with a history of inhibitors and those with low neutralizing antibody titers, expanding its relevance and potential impact on broader patient populations.

C2P FORUM
CONNECT TO PEOPLE
European
Hematology and Blood Disorders Congress
April 14-15, 2025 | Rome, Italy

# CHEMO-PREVENTIVE STRATEGIES FOR ORAL CANCER UTILIZING AN INNOVATIVE PERSISTENT NANOMEDICINE APPROACH

**Mohammed Imad Malki**
*Qatar University, Qatar*

## Abstract

Oral cancer remains a major global health burden, often diagnosed at advanced stages with limited treatment options and poor prognosis. Conventional therapies, including surgery, chemotherapy, and radiotherapy, face significant challenges such as systemic toxicity, recurrence, and poor bioavailability of chemopreventive agents. Nanomedicine-based drug delivery offers a promising alternative by enhancing drug stability, prolonging circulation time, and enabling targeted drug release. This study explores the efficacy of a novel persistent nanomedicine approach for oral cancer chemoprevention. A polymeric nanoparticle (NP) system was developed to encapsulate curcumin and resveratrol, two well-established chemopreventive agents with potent anti-inflammatory, antioxidant, and anti-proliferative properties. Nanoparticles were synthesized using a solvent evaporation technique and characterized for size, surface charge, and morphology. Drug encapsulation efficiency and in vitro release kinetics were analyzed using high-performance liquid chromatography (HPLC), while cellular uptake was assessed in oral squamous cell carcinoma (OSCC) cell lines. The cytotoxicity of the nanoparticles was evaluated using the MTT assay, and apoptosis induction was analyzed via flow cytometry and caspase-3 activation. Additionally, in vivo chemoprevention studies were conducted using a 4-nitroquinoline-1-oxide (4NQO)-induced oral carcinogenesis rat model to assess tumor suppression and biochemical markers of oxidative stress and inflammation. The synthesized nanoparticles exhibited a uniform spherical morphology with an average size of 120 ± 10 nm, a zeta potential of -25 mV, and an encapsulation efficiency of 85%. Drug release studies showed an initial burst phase in the first 12 hours, followed by a sustained release over 72 hours. Cellular uptake analysis confirmed efficient nanoparticle internalization in OSCC cells, leading to a dose-dependent reduction in proliferation, increased apoptosis, and downregulation of NF-κB and PI3K/Akt signaling pathways ($p < 0.05$). In vivo studies demonstrated that the nanomedicine-treated group exhibited a significant reduction in the number and size of oral premalignant lesions, along with lower inflammatory markers and enhanced antioxidant enzyme activity compared to untreated controls.The results suggest that

## Biography

**Mohammed Imad Malki** is an Assistant Professor of Pathology and Chair of the Neuroscience Unit at College of Medicine, Qatar University. His research focuses on clinical and molecular cancer research, particularly in cancer diagnostics and therapeutics. He has published over 50 peer-reviewed articles in high-impact journals, contributing significantly to the field. In addition to his research, Dr. Malki is actively involved in academic leadership and medical education. He serves as an Associate Editor and Reviewer for several prestigious journals and regularly mentors students and researchers. His work integrates clinical practice with molecular research, aiming to enhance cancer prevention, early detection, and treatment strategies.

the persistent nanomedicine system effectively improves drug retention, targeted delivery, and therapeutic efficacy. The sustained release formulation minimizes systemic toxicity while maximizing anti-cancer effects, highlighting its potential for chemoprevention. The suppression of NF-κB and PI3K/Akt pathways contributed to reduced tumor proliferation and enhanced apoptosis. Furthermore, the combination of curcumin and resveratrol in a nanoparticle-based system provides synergistic effects that could enhance overall treatment outcomes.

European
Hematology and Blood Disorders Congress
April 14-15, 2025 | Rome, Italy

# KIDNEY IN VHL DISEASE: EARLY CLEAR CELL PROLIFERATION OCCURS IN THE DISTAL TUBULAR SYSTEM

**Nayef S Al Gharaibeh[1], Constance J Temm[2], haron B Shively[3] and Alexander O Vortmeyer[4]**

[1]*Indiana University School of Medicine, USA*
[2]*Jordan University of Science and Technology, Jordan*
[3]*National Institute of Neurological Disorders and Stroke, USA*
[4]*The George Washington University, USA*

## Abstract

Renal clear cell carcinoma commonly occurs in patients with von Hippel Lindau disease (VHL). Kidneys of VHL disease patients (VHL kidneys) contain an abundance of independent clear cell proliferation events that have been hypothesized to represent precursor structures of clear cell carcinoma. In the present study, it was tried to identify the site of origin of clear cell proliferation, and the immunophenotype of clear cells. Using 3D histological tracking, the topographic origin of microscopic clear cell proliferation was investigated by identification of informative structures of interest and immunohistochemical staining for cluster of differentiation 10 (CD10) and cytokeratin 7 (CK7) in consecutive serial sections. In addition, the CD10/CK7 immunophenotype of proliferating clear cells was evaluated. Clear cell proliferation uniformly occurred in the distal tubular system. Some clear cell proliferation, however, revealed proximal tubule immunophenotype. It was concluded that early proliferation of VHL deficient clear cells occurs in the distal tubular system. Despite the association with the distal tubular system, the immunohistochemical profile of early clear cell proliferation may be inconsistent with its distal tubular origin.

## Biography

**Nayef S. Al-Gharaibeh** is a Professor of Physiology and Biophysics at the Jordan University of Science and Technology (JUST), Faculty of Medicine, Department of Physiology & Biochemistry. He holds a Ph.D. in physiology and biophysics and has made significant contributions to biomedical research, particularly in renal physiology and membrane transport. His work includes studies on erythrocyte physiology and the pathophysiology of kidney diseases, including von Hippel-Lindau (VHL) disease. Throughout his career, Professor Al-Gharaibeh has played a pivotal role in medical education and research, contributing to the advancement of physiology and biophysics in Jordan and internationally.

C2P FORUM
CONNECT TO PEOPLE
European
Hematology and Blood Disorders Congress
April 14-15, 2025 | Rome, Italy

# EVOLVING IMMUNE LANDSCAPE IN BREAST CANCER

**Pawan Kirtani**
*Aakash Healthcare Superspeciality Hospital, India*

## Abstract

As known across the world, concepts of Immunooncology and Immunotherapy in cancers is an evolving concept with low to middle income group countries fast catching up. Breast cancer is one entity wherein the concept of immunotherapy is being widely used but because of cost implications, its not feasible and affordable to everyone. PDL1 targeted therapy as we are aware is being used in a variety of cancers and the associated drugs are being provided by pharma companies on dose to dose basis with cost sharing but no such support is available for diagnostic algorithms including PDL1 testing. The assessment of Tumor Infiltrating Lymphocytes (TIL's) is gaining importance as a prognostic and predictive marker in all breast cancer subtypes. Hence, TIL's are increasingly being reported in daily practices in breast cancer globally. High TIL's are associated with a better outcome and a better response to neoadjuvant therapy in Triple negative, HER2 positive breast carcinomas as well as high-risk luminal disease, as well as having strong prognostic value in improving estimates of distant recurrence-free survival, disease-free and overall survival in early-stage TNBC, HER2 positive breast carcinoma as well as high-risk luminal disease (Level 1B evidence). This is based on an evaluation of TIL's by pathologists at the time of diagnosis. Their quantification is done on H&E stained tissue sections during diagnosis procedure and follows international recommendations (www.tilsinbreastcancer.org). Clinical utility using TIL's as a biomarker for selection of patients for treatment with immune-checkpoint-inhibition is emergingly becoming important. PDL1-assessment in breast cancer is controversial with concerns on its reproducibility between pathologists. This still creates confusion in the pathology-field as well as among oncologists and at the regulatory level. It will be argued that TIL's evaluated on an H&E can be helpful to mitigate the current issues with PDL1-assays, based on phase II and phase III trial data. Furthermore, TIL's are currently used as a stratification factor in several prospective clinical trials and should be included in all studies involving or evaluating prognosis in TNBC, HER2 positive breast cancer and high-risk luminal disease. The combined narrative of the importance of TILs in daily practice as a prognostic and predictive factor, together with PDL1, will be elaborated upon.

## Biography

**Pawan Kirtani:** I've done my postgraduation- MD. Pathology from one of most reputed institutions in India; Manipal University, followed by a rich work experience across major private multispeciality and oncology centers in New Delhi. I've been working in close association with International Immunooncology working group and sharing data regarding TIL's and PDL1 testing in Indian patients. Apart from multiple publications in High index International journals, I'm also an Associate editor with "ecancer" – a well known International online oncology journal and get to review articles from across the globe. I've helped develop histopathology departments in a couple of a major hospitals in New Delhi and being a keen academician, also teach postgraduate students pursuing pathology as a career and heading DNB. Pathology program in the current organization.

European
Hematology and Blood Disorders Congress
April 14-15, 2025 | Rome, Italy

# COMBINED FLUORESCEIN AND METHYLENE BLUE DYE FOR SENTINEL LYMPH NODE BIOPSY IN PATIENTS OF EARLY CARCINOMA BREAST: A PROMISING TECHNIQUE

**Rajandeep Singh Sethi[1], Navjot Kaur[2], Sanjeev Patni[3], Prashant Sharma[3], Anjali Sharma[4] and Syed Shujatulla Hussaini[5]**

*[1]Indus Hospitals (Fatehgarh Sahib, Dera Bassi, Mohali) India*
*[2]Indus International Hospital (Indus Hospitals), India*
*[3]BMCHRC, Inda*
*[4]Dr. B Lal Clinical Lab, India*
*[5]GDHRI & GIMSH, India*

## Abstract

Sentinel lymph node biopsy is currently the gold standard for clinically node-negative patients of carcinoma breast. Fluorescein is a safe, low-cost agent, and easily available. Fluorescein has shown a promising role in sentinel lymph node evaluation in carcinoma breast in combination with methylene blue dye with a detection rate of more than 90% and a false-negative rate of less than 10% in previous studies. This study aims to determine the detection rate and diagnostic accuracy of fluorescein and methylene blue dye in early breast cancer. The identification rate and false-negative rate of the combined blue and f luorescent dye method were 100% and 7.14% respectively. The accuracy of the combined blue and fluorescein dye method was 98.3%. The sensitivity, specificity, negative predictive value, and positive predictive value of the combined blue dye and fluorescein dye method were 92.8%, 100%, 97.8%, and 100% respectively. Thus, the combined blue and fluorescein dye method is an easy, safe, cost-effective, and reliable method of sentinel lymph node biopsy in early breast cancer patients.

## Biography

**Rajandeep Singh** Sethi is a consultant Surgical Oncologist (Cancer Surgeon) at MY Hospital, (Indus Hospitals Fatehgarh Sahib and Derabassi ), Mohali, Punjab, India. He has completed his MBBS, and after that MS (General Surgery) from Rajindra Hospital & Government Medical College, Patiala. He has then completed his Super Specialty Doctorate of National Board (DrNB) degree in Surgical Oncology (Oncosurgery) from one of the largest and Dedicated Cancer hospital - Bhagwan Mahaveer Cancer Hospital and Research Centre, Jaipur. He has also worked in Surgical Oncology department, AIIMS Bathinda Punjab. Dr. Singh has also completed his fellowship in Minimally Access Surgery (FMAS) and advanced laparoscopic surgery in oncology (FALS).

Publications and Conferences: Publications in various journals as author and Co-Author. He has attended and presented papers at various conferences. He is also a member of prestigious National Academy of Medical Sciences (MNAMS), Fellow of Society of Surgical Oncology (USA), ASI, IASO, ABSI, AGOI, ISO etc.

European
Hematology and Blood Disorders Congress
April 14-15, 2025 | Rome, Italy

# PDGFRB - REARRANGED MYELOID NEOPLASM WITH HYPEREOSINOPHILIA IN A 58-YEAR-OLD MALE: A CASE REPORT

**Ronabel S Laspiñas, Maria Milagros D Uy, Dehuel B Cuyacot and John Anthony B Tindoc**

*Silliman University Medical Center Foundation, Philippines*

## Abstract

**Introduction:** Hypereosinophilia (HE; absolute eosinophil count [AEC] ≥1.5 × 10⁹/L) is a rare condition with an estimated incidence of 0.4 cases per 1,000,000.1 Eosinophilia with recurrent genetic abnormalities (e.g., PDGFR, PDGFR, FGFR1) accounts for a minority of these cases, with the FIP1L1- PDGFR fusion being the most common genetic abnormality.2 PDGFR-positive myeloid neoplasms are particularly rare.3

**Case:** A 58-year-old male, C.G., who worked in Kuwait, returned to the Philippines with complaints of right cervical and inguinal lymphadenopathy and a non-healing right leg ulcer of 3 months duration. Initial complete blood count (CBC) revealed marked leukocytosis (WBC=56,290/µL), with 85% eosinophilia (AEC: 87,846). Peripheral blood smear showed predominantly normocytic, normochromic red blood cells and marked leukocytosis with eosinophil predominance. An incision biopsy of the right cervical lymph node revealed a lymphoproliferative lesion with eosinophilia. Bone marrow biopsy showed normocellular marrow with hypereosinophilia and no malignant cells. Fluorescence in-situ hybridization (FISH) testing identified a PDGFR rearrangement. The patient was subsequently treated with imatinib.

## Biography

**Ronabel S. Laspiñas** is a dedicated resident physician at Silliman University Medical Center Foundation, Inc., Philippines, with a strong interest in hematology and oncology. She is passionate about advancing medical knowledge, particularly in rare hematologic disorders. She is currently submitting her first case report on PDGFRß-rearranged myeloid neoplasm with hypereosinophilia, a rare but significant condition. Her research emphasizes the importance of early genetic testing in patients with unexplained eosinophilia, aiding in timely diagnosis and targeted treatment.

European
Hematology and Blood Disorders Congress
April 14-15, 2025 | Rome, Italy

# ABO, RH AND KELL BLOOD GROUP ANTIGENS FREQUENCIES AMONG SAUDI POPULATION IN QURAYYAT CITY, SAUDI ARABIA

**Shahad Naif Alanazi, Azza A Alkhawlee, Rahaf M Al-Sharari, Nouf S Alanzi and Dana H Al-Sharari**

*AlJouf University, Saudi Arabia*

## Abstract

**Background:** Understanding the distribution of blood group antigens is crucial for optimizing transfusion practices and managing hemolytic disorders. This study aims to analyze the frequencies of ABO, Rh, and Kell blood group antigens in the Saudi population of Qurayyat city, Saudi Arabia

**Methods:** A cross-sectional study was conducted at Qurayyat General Hospital, involving 400 participants from the local population. Blood samples were collected in EDTA tubes and analyzed using gel card technology to determine the presence of ABO, Kell, and Rh antigens.

**Results:** The ABO blood group distribution in the study population showed that blood group O was the most prevalent at 39.2%, followed by blood group B at 31.9%, blood group A at 23.6%, and blood group AB at 5.2%. Analysis of the Kell antigen revealed that 88% of the population tested negative for the K antigen, while 12% were positive. Regarding the Rh antigen system, the frequency of Rh phenotypes was as follows: RhD positive individuals represented 91.2%, while RhD negative accounted for 8.8%. Among the Rh antigen subtypes, the prevalence rates were highest for D (91.2%), followed by C (21.5%) and E (13.0%). The study also compared these results to global data, finding that the Rh phenotype distribution in Qurayyat aligns closely with that of Caucasian populations.

**Conclusion:** The study found a high prevalence of blood group O in the Qurayyat population, with a significant percentage also carrying blood group B. Positive RhD and Kell-negative antigens were predominant, indicating a similar distribution pattern to Caucasian populations. These findings highlight the importance of understanding local antigen frequencies to improve blood transfusion safety and manage hemolytic diseases effectively in Saudi Arabia. Future studies with larger sample sizes across different regions are recommended to provide a more comprehensive picture of blood group antigen frequencies in the Saudi population.

## Biography

**Shahad Naif Hussain** Al-Anazi, a 24-year-old Saudi from the Al-Jouf region in Qurayyat Governorate, is a student at Al-Jouf University and is currently pursuing her training at the Regional Laboratory and Central Blood Bank under the Health Department of Qurayyat.

C2P FORUM
CONNECT TO PEOPLE
European
Hematology and Blood Disorders Congress
April 14-15, 2025 | Rome, Italy

# BLOOD COMPONENT RATIOS IN TRAUMA INDUCED COAGULOPATHY PATIENTS, A PRELIMINARY STUDY OF A COMBINED META-ANALYSIS

**Wenhao Lin**
*Shanghai Jiao Tong University, China*

## Abstract

**Background:** Trauma-induced coagulopathy (TIC) is a life - threatening complication in trauma patients, significantly increasing the risk of morbidity and mortality. The blood transfusion strategies play a crucial role in quickly correct blood component deficiencies and restore hemostasis.

The blood transfusion strategies for trauma patients, especially TIC remain a subject of intense debate. The aim of this network meta-analysis is to integrate evidence from randomized trials, and observational studies to evaluate the survival outcomes and coagulation recovery across transfusion protocols.

**Methods:** Two kinds of meta-analysis were combined to measure the 24-hour mortality, 28-day mortality, and key coagulation parameters of TIC patients receiving different blood transfusion strategies. The ordinary meta-analysis was applied to preliminarily explore the heterogeneity between studies. mainly focusing on the direct evidence. The network meta-analysis was applied to compare direct and indirect comparisons among different blood transfusion strategies.

**Results:** Initially, seven studies were included, consisting of 3 randomized controlled trials (RCTs) and 4 observational cohorts. These studies compared fixed-ratio transfusion strategies, such as a 1:1:1 ratio of red blood cells (RBCs), plasma, and platelet transfusions, with goal-directed or component-specific strategies.

When compared to the 1:1:1 ratio transfusion, goal-directed strategies did not show a significant reduction in 24-hour mortality or 28-day mortality. Targeted cryoprecipitate was found to significantly improve coagulation recovery, particularly in terms of ROTEM parameters.

**Conclusion:** Different transfusion ratios and components have minimal impact on survival outcomes in TIC patients. Clinical efforts should focus on leveraging advancements in blood source management to enhance the utilization of blood products, more focusing on the potential advantages of coagulation recovery of trauma patients with TIC.

## Biography

**Wenhao Lin** was once an attending physician in trauma surgery, mainly engaged in research on traumatic coagulopathy and trace elements. Currently, he is pursuing a second master's degree (major in Business Administration at Shanghai Jiao Tong University).

**Note:**

# Upcoming Conferences @ C2P FORUM

| | | |
|---|---|---|
| 2nd Euro-Global Summit on **Biofuels and Bioenergy** | Nov 03-04, 2025 | Prague, Czech Republic |
| **2nd European Cancer and Oncology Congress** | Nov 03-04, 2025 | Prague, Czech Republic |
| **2nd European Hematology and Blood Disorders Congress** | Nov 03-04, 2025 | Prague, Czech Republic |
| 2nd World Conference on **Infectious Diseases** | Nov 06-07, 2025 | Vienna, Austria |
| 2nd World Conference on **Microbiology** | Nov 06-07, 2025 | Vienna, Austria |
| European Congress on **Climate Change and Environmental Sustainability** | Nov 06-07, 2025 | Vienna, Austria |
| 2nd European Congress on **Recycling and Waste Management** | Nov 06-07, 2025 | Vienna, Austria |
| 2nd World Congress on **Applied Science and Engineering** | Nov 06-07, 2025 | Vienna, Austria |
| World Congress on **Biomedical Science and Engineering** | Nov 06-07, 2025 | Vienna, Austria |
| **2nd European Public Health and Epidemiology Conference** | Nov10-11, 2025 | Athens, Greece |
| **European Rare Diseases and Orphan Drugs Conference** | Nov 10-11, 2025 | Athens, Greece |
| International Conference on **Applied Chemistry** | Nov 10-11, 2025 | Athens, Greece |
| International Conference on **Mass Spectrometry and Analytical Techniques** | Nov 10-11, 2025 | Athens, Greece |
| 2nd European Meeting on **3D Printing and Additive Manufacturing** | Nov 10-11, 2025 | Athens, Greece |
| 2nd European Meeting on **Renewable Energy and Sustainable Development** | Nov 13-14, 2025 | Rome, Italy |
| European Meeting on **Biopolymers and Bioplastics** | Nov 13-14, 2025 | Rome, Italy |
| 2nd European Congress on **Materials Science and Engineering** | Nov 13-14, 2025 | Rome, Italy |
| 2nd European Congress on **Advanced Nanomaterials and Nanotechnology** | Nov 13-14, 2025 | Rome, Italy |
| 2nd Global Summit on **Structural Biology and Protein Science** | Nov13-14, 2025 | Rome, Italy |
| International Conference on **Gynecology, Obstetrics and Women's Health** | Nov17-18, 2025 | Dubai, UAE |
| International Conference on **Pediatrics & Pediatric Nutrition** | Nov 17-18, 2025 | Dubai, UAE |

https://c2pforum.com/upcoming-conferences/

## Bookmark the Dates

C2P FORUM
CONNECT TO PEOPLE

2nd European

# HEMATOLOGY AND BLOOD DISORDERS CONGRESS

November 03-04, 2025 | **Prague, Czech Republic**


**Contact us:**

Email: info@c2pforum.com
contact@c2pforum.com
Phone: +1-864-920-0042