

PROCEEDINGS

WOMEN IN ONCOLOGY EUROPE SUMMIT 2025

Theme: "Bridging Research, Care & Advocacy:
A Woman's Voice in Every Step".

13 - 14 SEPTEMBER, 2025 | ONLINE

wowoncology







Dr. Maryna Sokolovska, MD, PhD

Associate Professor Head of the Radiation Oncology Center ¹National Cancer Institute of Ukraine, Kyiv Ukraine.

Title: Challenges and Opportunities in Delivering Radiation Oncology During Crisis Situations – Maintaining Standards of Care Amidst Resource Limitations.

Co-Authors: R. Zelinskyi¹, N. Kovalchuk²

The full-scale Russian invasion of Ukraine in February 2022 created unprecedented disruptions to cancer care, severely impacting access to diagnostics, treatment, clinical trials, and radiotherapy services. Hospitals in conflict-affected regions were damaged or repurposed, cancer drug supply chains were interrupted, and healthcare staff were displaced, resulting in treatment interruptions for thousands of patients. Clinical research was particularly affected: by early 2022, Ukraine hosted 584 ongoing trials, including 245 in oncology, but many were halted or suspended following the invasion. Despite these challenges, Ukrainian oncology has demonstrated resilience. Cancer centers outside combat zones adapted protocols, restored disrupted services, and developed alternative supply chains. Radiotherapy faced equipment shortages, outdated cobalt-based technologies, and power outages, yet treatment volumes returned to pre-war levels by 2023. To minimize interruptions, centers adopted shorter treatment regimens, extended working hours, added compensatory sessions, temporarily transferred patients, introduced telemedicine, and prioritized urgent cases while deferring less critical ones. Large-scale modernization - including the installation of 24 new linear accelerators - has been supported by international partners. Among them, the most active and influential has been the Help Ukraine Group (HUG), which mobilized global resources to deliver training, observerships, software, and critical equipment. This keynote will highlight systemic challenges, examples of adaptation, and strategies for sustaining recovery through modernization, clinical research, workforce development, and global collaboration.

Author's Biography: Radiation oncologist with over 20 years of clinical experience in EBRT, brachytherapy, and orthovoltage therapy. Active member of ESTRO, ASTRO, ISRS, BrachyAcademy and HUG-supported training programs, with international training at The Christie (UK) and Miami Cancer Institute (USA).

Keywords: cancer care, radiotherapy, clinical trials, Ukraine, resilience, Help Ukraine Group

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Dr. Diana Donatello Specialist - Diagnostic Radiology Vanvitelli University of Naples. Italy

Title: An overview of the use of cutting-edge artificial intelligence (AI) modeling to produce synthetic medical data (SMD) in decentralized clinical machine learning (ML) for ovarian cancer(OC) and ovarian lymphoma(OL).

Aim To point out how novel analysis tools of AI can make sense of the data acquired during OL and OC diagnosis and treat ment in an effort to help improve and standardize the patient pathway for these disease. Material and methods ultilizing programmed detection of heterogeneus OL and OC habitats through radiomics and correlate to imaging based tumor grading plus a literature review.

Results new analysis pipelines have been generated for integrating imaging and patient demographic data and identify new multi-omic biomarkers of response prediction and tumour grading using cutting-edge artificial intelligence (AI) in OL and OC.

Description deline the main AI methods used in OL and OC that we can try to standardize in the clinical radiological and medical practice to ameliorate the patients diagnosis and theraphy.

Conclusion through new AI methods it's possible to combine research into a SwarmDeepSurv, generate new data flow chan nels, create medical imaging data channels of OL and OC using AI and identify new biomarkers of OL and OC.

Author's Biography: Dr. Diana Donatello is a Specialist in diagnostic radiology at the Vanvitelli University of Naples with a thesis in applied senology. Graduated in Medicine and Surgery at the University of Bologna with a thesis on the use of imaging techniques for the early diagnosis of ovarian lymphoma. Speaker and moderator at international medical conferences, publicist of medical research articles, she recently published in the international medical journal Springer "Journal of Ultrasound" an innovative article on the use of AI in early medical diagnosis (An overview of the use of cutting-edge artificial intelligence (AI) modeling to produce synthetic medical data (SMD) in decentralized clinical machine learning (ML) for ovarian cancer (OC) and ovarian lymphoma (OL))

I have always been passionate about methodologies for the use of diagnostic imaging in gynecology and for women's well-being.



Dr. Uzma Gul

Consultant Radiation Oncologist and Radiosurgeon Department of CyberKnife and TomoTherapy, Jinnah Postgraduate Medical Centre, Karachi, Pakistan.

Title: Precision Without Incision: CyberKnife SRS in the Management of Glomus **Tumours**

Objective: To evaluate the efficacy and safety of frameless CyberKnife SRS (stereotactic radiosurgery) for head and neck glomus tumours, with clinical improvement as the primary endpoint and radiologic response as a secondary endpoint.

Methods: We retrospectively reviewed 147 consecutive patients with head and neck glomus tumours treated with CyberKnife SRS between March 2023 and March 2025. The median prescription dose was 16 Gy (range 13–18 Gy) in a single fraction for small lesions, or 25 Gy (range 21–30 Gy) delivered over 3–5 fractions for larger tumours. Radiologic response was defined as ≥ 10% volume change on serial MRI. Clinical improvement was based on documented symptom relief in clinical notes. Time-to-event analyses (radiologic response and clinical improvement) employed Kaplan-Meier methods, with patients who had not yet experienced the event by last follow-up (median follow-up: 14.4 months, range 2–41 months) treated as censored observations.

Results: Median age was 39 years (IQR=30-50), and 66% were female. Common presenting symptoms were hearing loss (61.9%), tinnitus (33.3%), and hoarseness (21.1%). By last follow-up, 74% of tumours demonstrated radiologic shrinkage and 24% remained stable; no cases exceeded a 10% increase in volume. Clinical improvement was documented in 52% of patients. Median time to clinical improvement was 36 months (95% CI 31.5-40.5), an estimate that exceeds the median observed follow-up due to censoring of patients who had not yet shown documented symptom relief. The median progression-free survival was 24 months (95% CI 19.9–28.0), with estimated PFS probabilities of approximately 80% at 6 months and 68% at 12 months No 2 Grade 3 toxicities were observed.

Conclusions: CyberKnife SRS provides excellent local control, favourable symptom improvement, and minimal morbidity, supporting its role as a primary treatment modality for glomus tumours, particularly in surgically challenging cases.

Keywords: Glomus tumours, Paraganglioma, CyberKnife, Stereotactic radiosurgery (SRS), Head and neck neoplasms, Hypo fractionated radiotherapy, Cranial nerve preservation.

Author's Biography:

Dr. Uzma Gul is a Consultant Radiation Oncologist and Radiosurgeon at the Department of CyberKnife and TomoTherapy, Jinnah Postgraduate Medical Centre, Karachi, Pakistan. She has extensive expertise with CyberKnife S7, VSI, and TomoTherapy Radixact systems. Her pioneering clinical trials include the Fast Forward trial for breast cancer on Radixact, hypofractionation in rectal cancer, re-irradiation in head and neck cancers, and management of metastatic paraaortic nodes.

She is leading prospective studies on cognition after brain radiotherapy by limiting V12 and on CyberKnife radiosurgery as a primary treatment for glomus tumors.

Her research on chordoma and chondrosarcoma using extreme hypofractionated radiotherapy has been submitted to national journals.

She is a founding chair of the Onco-Rehab Tumor Board and serves on gynecologic oncology, breast, and surgical oncology tumor boards.

She plays an active role in mentoring junior doctors and radiotherapists.

She collaborates internationally through the Accuray Ascend program and has presented her work at ESMO.

Her focus is on advancing precision radiotherapy in resource-constrained settings. She is recognized for integrating clinical innovation, research, and education in radiation oncology.



Dr. Purnopama Puja

Specialty Trainee, Clinical Oncology, Rajshahi Medical College Hospital, Rajshahi Medical University, Rajshahi, Bangladesh.

Title: Low-Grade Endometrial Stromal Sarcoma: A Rare Case Report of Delayed and **Multiple Recurrences**

Low-grade endometrial stromal sarcoma (LGESS) is a rare tumor of the uterus originating from mesenchymal tissue, known for its indolent course yet a significant risk for late recurrence and spread beyond the uterus. The occurrence of primary or recurrent LGESS extending to the abdominal wall is extremely rare and poses significant diagnostic and treatment challenges, particularly in settings with limited resources. This case report focuses on the diagnostic obstacles and successful treatment of a 47-year-old woman with recurrent LGESS that invaded the rectus muscle. A collaborative approach—which included meticulous surgical intervention, customized chemotherapy, advanced radiation treatment strategies, and targeted therapy with pazopanib—resulted in excellent management of the disease. This case emphasizes the necessity of personalized treatment in the effective management of rare cancers with unusual presentations.

Author's Biography:

Purnopama Puja is a dedicated clinical oncology trainee currently pursuing specialty training at the ST4 level at Rajshahi Medical College Hospital. With a deep commitment to advancing the field of clinical oncology, Purnopama actively participates in ongoing research projects and has presented cases at both National and International conferences. Staying up-to-date with the latest advancements in oncology, including participation in clinical trials and critical review of emerging literature, she is passionate about contributing meaningfully to the evolving landscape of cancer treatment and making a lasting impact.

Keywords: low-grade endometrial stromal sarcoma, extrauterine recurrence, targeted therapy, pazopanib



Dr. Javeria Qadir (Ph.D.)

Assistant Professor Department of Biological Sciences, Islamic International University, Islamabad-Pakistan.

Title: Taming the Hippo: YAP/TAZ Expression as a Novel Biomarker and Therapeutic **Target in Breast Cancer**

The Hippo pathway regulates development, tissue regeneration, and tumorigenesis, but its role in breast cancer remains unclear. This study investigated Hippo pathway molecules (NF2, MST1, LATS1, YAP1, TAZ1, TEAD1) in a Pakistani breast cancer cohort at transcript and protein levels, correlating with clinico-pathological parameters, molecular subtypes, and survival. NF2, MST1, and LATS1 were strongly downregulated, particularly in younger, premenopausal, late-stage, and metastatic patients. Conversely, YAP1, TAZ1, and TEAD1 were significantly upregulated, associated with advanced stage, poor differentiation, and poor prognosis. Subtype-specific associations were observed, including reduced LATS1 in Luminal B and elevated YAP1/TEAD1 in Luminal A and TNBC. TAZ1 overexpression appeared linked to early disease onset. To explore functional relevance, circYAP, a circular RNA form of YAP1, was evaluated in vitro and in vivo. circYAP overexpression reduced YAP1 and TEAD1 protein levels, impairing proliferation, migration, and survival in breast cancer cells. RNA pull-down identified vimentin and cytoskeletal proteins as circYAP-binding partners, suggesting roles in structural stability. In murine models, circYAP suppressed tumor growth, invasion, and metastasis while promoting apoptosis. Overall, Hippo pathway dysregulation emerges as a determinant of breast cancer progression. circYAP exerts tumor-suppressive functions, highlighting its therapeutic potential and its value as a prognostic biomarker.

Author's Biography:

Dr. Javeria Qadir holds a Ph.D. in Molecular Genetics (Cancer Biology) from COMSATS University, with research experience at the University of Toronto. Her work focuses on cell signaling pathways, circular RNAs, and RNA biology in breast cancer. She has expertise in molecular oncology, tumor biology, and translational cancer research. Currently, she is serving as an Assistant Professor at a leading public sector university in Pakistan.

Key words: Hippo signaling, YAP/TAZ/TEAD, circYAP, breast cancer, prognostic biomarker, potential target



Dr. Rima SAAD BOUZID

Doctor in Molecular Biology, Faculty of Nature and Life Sciences, University of BATNA 2, Algeria.

Title: Breast Cancer Under the Microscope: Early Insights into Tissue and Molecular **Characteristics**

Breast cancer is the most frequently diagnosed malignancy and the second leading cause of cancer-related death among women in Algeria. This study presents preliminary data on the histological and molecular profiles of breast cancer cases managed at the CLCC Batna. A total of 573 cases were retrospectively analyzed based on age, histological subtype, Scarff-Bloom-Richardson (SBR) grade, hormone receptor status, HER2 expression, and molecular classification.

The mean age at diagnosis was 50 years, with a predominance in the 50–59 age group. Invasive ductal carcinoma (IDC) was the most common histological type (85.5%), followed by invasive lobular carcinoma (9.4%). SBR grade II was the most frequently observed. Molecular subtyping revealed a predominance of luminal B tumors (48.9%), followed by luminal A (23.4%), triple-negative (17.3%), and HER2-enriched subtypes (10.5%). IDC was particularly frequent among women aged 40–59 and was largely associated with the luminal B molecular phenotype.

These preliminary results highlight the predominance of aggressive molecular subtypes and suggest the importance of molecular profiling in breast cancer management. Further comprehensive analyses are ongoing to refine the molecular and immunohistochemical characterization of breast cancer in this population.

Author's Biography:

Since joining the Faculty of Biology at the University of Batna in Algeria, Dr. Rima Saad Bouzid has been deeply involved in research combining molecular biology with computational approaches. Her interdisciplinary expertise supports innovative investigations in cancer genetics, particularly breast cancer, contributing to the development of targeted therapeutic strategies and precision medicine.

Key words: Breast cancer, Histological type, sub-molecular type, **Immunohistochemistry**





Dr. Laraib Khan

Chief Resident, Radiation Oncology Department of Oncology, Agha Khan University Hospital, Karachi, Pakistan.

Title: Lung Dose Reduction Through DIBH Coaching: A Novel Clinical Finding for Pulmonary Toxicity Prevention in Left-Sided Breast Cancer.

Deep inspiration breath hold (DIBH) techniques are widely employed to minimize cardiac exposure during radiotherapy for left-sided breast cancer; however, emerging evidence indicates potential pulmonary benefits as well. This study evaluated the impact of structured DIBH coaching protocols on lung dose reduction, shifting focus from conventional cardiac endpoints toward broader thoracic organ protection. Forty patients receiving adjuvant radiotherapy with DIBH were analyzed and stratified into two groups: those receiving only verbal guidance and those undergoing a structured, physician-led coaching program with home practice. The primary endpoint was lung dosimetry, particularly V17 values, while secondary analysis included cardiac exposure. Coached patients demonstrated a statistically significant reduction in left lung V17 exposure (18.3) vs. 21.6, p < 0.05), representing the first documented evidence that formal DIBH coaching directly improves pulmonary sparing. While reductions in cardiac dose were observed, they did not reach statistical significance, highlighting lung protection as the primary measurable benefit of coaching.

These findings suggest structured DIBH training enhances dual-organ protection and warrant reconsideration of implementation priorities, potentially extending its clinical value to right-sided or bilateral breast cancer radiotherapy.

Author's Biography:

Dr. Laraib Khan is Chief Resident in Radiation Oncology at AKUH. She is an active member of ESTRO, ESMO, and ASCO, with interests in advanced radiotherapy techniques, global oncology, and leadership in cancer care. She is strongly committed to promoting women's leadership and equity in oncology.

Key words: DIBH, Patient coaching, lung toxicity, cardiotoxicity





Dr. Guzal Asrarova

Resident Doctor, Cancer Prevention Center, ¹²Republican Oncological Scientific Center of the Republic of Uzbekistan, Tashkent, Farobiy 383.

Title: Correlation Between Pathohistological and Immunohistochemical **Characteristics of Breast Cancer**

Authors: Tillyashaykhov M.N.¹, Khaxxarov A.J.², Asrarova G.D.³, Zukhurzhanova Z.A.⁴.

Background:

Breast cancer displays significant heterogeneity in morphological grade and molecular Precise correlation between pathohistological immunohistochemical profiles (e.g., Luminal B, Her2/neu, triple-negative) is essential for accurate prognosis and personalized treatment planning.

Objective

To assess the correlation between pathohistological findings and immunohistochemical profiles of breast cancer in the studied patient group.

Methods:

We evaluated histological specimens from 87 female patients diagnosed with breast cancer at the Department of Pathomorphology, Republican Oncology Center, Tashkent. **Tumor** classification by histological type was and grade immunohistochemical analysis to determine molecular subtypes and their association with histopathological findings.

Results:

Histopathological grading identified invasive ductal carcinoma G1 in 47/87 patients (54%), G2 in 21 (24%), and G3 in 8 (9%). Other diagnoses included invasive carcinoma G1 (3.5%), invasive carcinoma G2 (5.8%), infiltrative carcinoma G2 (1.2%), unspecified invasive carcinoma G2 (1.2%), and malignant adenoepithelioma G3 (1.2%).

Among invasive ductal carcinoma GI tumors, immunohistochemical subtyping revealed Luminal B Her2/neu-negative in 24%, Her2/neu-positive in 11.2%, and triple-negative in 12.6%. For invasive ductal carcinoma G2, 10.3% were Luminal B Her2/neu-positive, and 7% were Luminal B Her2/neu-negative.

Conclusion:

Invasive ductal carcinoma grade 1, particularly the Luminal B Her2/neu-negative subtype (24%), emerged as the most prevalent entity. This emphasizes the need to integrate immunohistochemical characterization with morphological grading to refine therapeutic decisions and prognostication.

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Dr. Roshni Bibi

¹Cancerimmunology and Gene Technology Lab, Department of Biotechnology SRM Institute of Science and Technology, Kattankulathur, Chennai, Tamil Nadu 603203, India

Title: STAT1 and STAT2 mediated T Helper Cell differentiation in epigenetic and epitranscriptomic modifications: implications for immune responses in Non-Small Cell Lung Cancer.

Co-Authors: Melvin George² and Koustav Sarkar¹

The lack of targetable mutations in about 50% of non-small cell lung cancer (NSCLC) cases and the emergence of resistance to existing therapies underscore the need for innovative treatment strategies. This study explores the roles of STAT1 and STAT2 in epigenetic and epi-transcriptomic modifications—such as histone methylation, DNA methylation, R-loop formation, and m6A RNA methylation—during T helper cell (TH) differentiation. Peripheral blood mononuclear cells (PBMCs) were isolated from NSCLC patients and healthy controls. CD4+ T cells were purified, and CRISPR/Cas9 technology was used for knockout assays, while overexpression was achieved via nucleofection. We analyzed 5-mC and m6A RNA methylation levels, along with the expression of genes involved in TH differentiation through quantitative reverse transcription PCR (qRT-PCR). Our findings indicate that STATI deficiency correlates with immunodeficiency and genomic instability due to increased R-loop formation, while STAT2 exhibits an opposing effect. Abnormalities in m6A RNA methylation, DNA methylation, and histone modifications were observed in CD4+ TH cells from both NSCLC patients and healthy individuals. These results highlight STAT1 and STAT2 as critical regulators of epigenetic mechanisms in TH cell differentiation and immune responses in NSCLC, suggesting potential therapeutic targets.

Keywords: STAT1, STAT2, NSCLC, epigenetic, CD4+ TH cells

Author's Biography: I am Roshni Bibi, PhD Research Scholar at SRM Institute of Science and Technology, Chennai, focusing on cancer immunotherapy. My research explores STATI/STAT2-mediated epigenetic and epitranscriptomic regulation of CD4+ T helper cell differentiation in NSCLC. I hold an M.Sc. in Zoology, a PG Diploma in Life Science Technologies, and have completed ICMR-HRD training in multi-omics approaches in molecular oncology.

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Thank You

