



YOUNG ONCOLOGIST CLUB

XII

INTERNATIONAL MEETING OF  
YOUNG ONCOLOGIST CLUB

*Transforming Cancer Care Therapy:  
Art Meets Science*

Hyatt Regency Praxels, May 9-10, 2025





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YOUNG ONCOLOGIST CLUB

## *Transforming Cancer Care Therapy: Art Meets Science*

Hyatt Regency Pravets, May 9-10, 2025

### PROGRAMME

#### FRIDAY, MAY 9, 2025 (DAY 1)

##### Hall Pravets

10.45 - 11.00 Conference opening/Welcome addresses – Young Oncologist Club Bulgaria, Balkan Investigation Network of Oncology, European Chinese Alliance of Oncology

##### LUNG CANCER SESSION

Moderators: Chr. Manegold & P. Balikova & G. Ganev

11.00 - 11.15 New Personalised Treatment of Lung Cancer, S. Baka

11.15 - 11.45 Challenges for Pathologists in Lung Cancer Diagnosis, M. Papotti

11.45 - 12.00 Innovative Diagnostics to Aid the Management of Screening Detected Lung Nodules, W. Voigt

12.00 - 12.15 Resectable Non-Small Cell Lung Cancer: Comparison of Effectiveness for Peri-operative Approaches, L. Piltz

12.15 - 12.35 Adjuvant Treatment for NSCLC, R. Krasteva

12.35 - 12.50 Resectable Non-Small Cell Lung Cancer: Peri-operative Treatment Options, Chr. Manegold

12.50 - 13.05 Clinical Role of 18FDG PET/CT in Differential Diagnosis of Benign and Malignant Positive Lung Lesions, J. Mihailovic

13.05 - 13.30 Precision Immunotherapy: Biomarkers and Individualized Strategy, Chr. Zielinski

13.30 - 14.30 Lunch

14.30 - 14.45 Multiple Cohort, Open-Label, Exploratory Clinical Study of Trilaciclib in Myeloprotection in First-Line Combination Chemotherapy Regimens for Advanced Solid Tumors – Interim Data Analysis, Xuan Su

14.45 - 15.00 Immunotherapy in the Treatment of SCLC, N. Chilingirova

15.00 - 16.00 Interactive Tumor Board - R. Krasteva, J. Arabadjiev, Chr. Manegold, N. Chilingirova, P. Castellucci, B. Iliev, P. Balikova, T. Hadjieva, Z. Zahariev, Ts. Tatarov



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### Hall Pravets

16.00 – 17.00 Putting the Pieces Together to Optimize the Management of BRAFV600E-mutant Tumors: Interactive Workshop with Clinical Cases for Melanoma and CRC – Pierre Fabre Symposium

- Let's Put the Puzzle Together in a BRAF Mutant Melanoma with Brain Metastasis

Moderator: A. Konsoulova

- Assembling the Pieces: How to Optimise Treatment Strategies for BRAFV600E-mutant mCRC

Moderators: R. Krasteva, N. Chilingirova

17.00 – 18.00 Breast and Prostate Cancer: Science and Experience - Novartis Symposium

Moderator: R. Krasteva

- New Opportunities in Prostate Cancer Treatment, R. Krasteva
- Pluvicto – The New Perspective, B. Iliev
- Moving to Breast Cancer, R. Krasteva
- eBC – Risk of Progression and Treatment Approach, L. Simeonova
- Clinical Experience with Ribociclib in Uni Hospital – Summary Analysis for the Period from March 2020 to March 2025, S. Nedeva

18.00 – 19.00 Immunotherapeutic Strategies in Gastrointestinal Cancers: Guidelines and Challenges - BMS Symposium

Moderator: R. Krasteva

- Clinical Case on Advanced Gastric Cancer and Data Supporting from CM649, Tsv. Yordanov
- Clinical Case on Advanced Esophageal Cancer and Data Supporting from CM649, I. Koleva
- Data on CRC (CM8HW) and HCC (CM9DW), R. Krasteva

19.00 – 20.00 What's New and What's Unprecedented in mBC and mNSCLC? - Pfizer Symposium

Moderator: R. Krasteva

- New Data from the Largest Real-World OS Comparison of the Three CDK4/6 Inhibitors + AI, I. Tonev
- How the Unprecedented 5-years CROWN Data Correspond to the Uni Hospital's Own Experience with Lorlatinib, B. Iliev

20.00 – 23.00 Dinner

### Hall Monovets

16.00 – 16.20 Lonquex® (lipegfilgrastim): Building Confidence from Experience, L. Simeonova - Teva Lecture

16.20 – 16.40 New Approaches in the Treatment of Metastatic Colorectal Cancer and Metastatic Cholangiocarcinoma - Servier Lectures

- The SUNLIGHT Study, Supported by Real-World Data in 3rd Line Treatment of mCRC, S. Nedeva

- New Therapeutic Approaches in the Treatment of mCCA and IDH1 Mutation, Ts. Yordanov

16.40 – 17.00 Modern Molecular Genetic Analyses in mCRC and their Role in Determining Therapeutic Behavior, N. Tsonev - Amgen Lecture

17.00 – 17.20 NUBEQA: Evolution in the Standard of Treatment for mHSPC, Tsv. Tatarov - Bayer Lecture

17.20 – 17.40 Tecentriq Subcutaneous Formulation (SC) - an Option for Optimizing the Immunotherapy Treatment, A. Changalova - Roche Lecture

### Hall Borovets

16.00 – 19.00 Pathology Workshop, M. Pappotti





## SATURDAY, MAY 10, 2025 (DAY 2)

### Hall Pravets

#### BREAST CANCER SESSION

Moderators: Al. Gerasimov & A. Fakirova & Y. Yordanov

09.00 – 09.15 The Rising Epidemic of Cancer in Younger Adults, F. Zagouri

09.15 – 09.30 Early Breast Cancer - What Is It? Methods of Detection, Surgical Treatment, G. Zografos

09.30 – 10.00 All you Need to Know about the HER2 Updates in Breast Cancer – workshop,  
S. Popovska, Sv. Batchurska

10.00 – 10.15 Non-FDG PET/CT in Diagnostic of Breast Cancer, R. Mei

10.15 – 10.30 Breast Cancer Management in Bulgaria: Evaluating Routine Practices, Treatment  
Strategies, and Gaps in Care, G. Dimitrov

10.30 – 10.45 Redefining Hope: Sacituzumab Govitecan in Metastatic Triple-Negative Breast  
Cancer, Shuang You

10.45 – 11.00 Hybrid Sentinel Lymph Node Imaging in Breast Cancer, M. Mihaylova

#### RADIOTHERAPY SESSION: Looking to the Future...

11.00 – 11.15 New Technologies in Radiotherapy – Ride in the Future, Z. Zahariev

11.15 – 11.30 Flash Radiotherapy - Gateway to Promised Land or Another Mirage / How Close  
Are We to Real Practice? /, T. Hadjieva

#### OTHER CANCER LOCALIZATIONS SESSION

Moderators: G. Ganey & A. Kontilev & T. Karanikolova

11.30 – 11.45 <sup>68</sup>Ga-FAPI PET Imaging in Oncology, S. Sergieva

11.45 – 12.00 Theranostic Approach in Prostate Cancer P. Castellucci

12.00 – 12.15 Non-FDG PET/CT in Diagnostic Oncology, F. Giammarile

12.15 – 12.30 Advances in Immunotherapy for Prostate Cancer, Yun Bai

12.30 – 13.30 Lunch

13.30 – 14.45 Workshop Young Oncologists Competition – Compare our Knowledge –  
Interactive Session

14.45 – 15.00 Cancer in Adolescent and Young Adults (AYA) – Current Landscape, Challenges and  
Unmet Needs. A Clinical Perspective, Tsv. Yordanov, A. Konsoulova

15.00 – 15.15 Neoplastic Complications Related to Breast Implants: Insight into Diagnosis and  
Treatment of Breast Implant - Associated Anaplastic Large Cell Lymphoma  
(BIA-ALCL) and Breast Implant-Associated Squamous Cell Carcinoma (BIA-SCC),  
Y. Yordanov

15.15 – 15.30 PET/MRI Based Radiomics and Artificial Intelligence in Prostate Cancer Diagnosis,  
V. Hadzhyiska

15.30 – 15.45 Prostate Cancer - What Does the Pathology Report Show us?, A. Fakirova

15.45 – 16.00 Leadership in Oncology, N. Toromanov



## Hall Pravets

16.00 – 17.00 Choosing the Right Treatment for Patients with NSCLC: Current Standard of Care and Future Opportunities - MSD Symposium

Moderator: J. Arabadjiev

- ▶ First-line Treatment of Metastatic NSCLC with Pembrolizumab – Real-World Oncology, R. Krasteva
- ▶ A New Era in ES-NSCLC: Reshaping the Role of Immunotherapy in the Treatment of Early Stage NSCLC, I. Tonev

17.00 – 17.40

- ▶ Johnson&Johnson Drugs for Advanced Prostate Cancer, Al. Gerasimov
  - ▶ Rybrevant® - Therapeutic Indications, B. Iliev
- Johnson&Johnson Symposium

17.40 – 18.40 EMBARK - Clinical Trial Data and Everyday Practice  
Astellas Symposium

Moderator: R. Krasteva

- ▶ Benefits of Early Intensification of nmHSPC, S. Bakalov
- ▶ EMBARK - Xtandi as a Combination with ADT in nmHSPC, M. Nikolov
- ▶ EMBARK - Xtandi as a Monotherapy in nmHSPC, N. Evgeniev

18.40 – 19.40 Who Wants to Be a Trial-ionaie? – Mastering the Essentials of BC, LC, and PC - Astra Zeneca Symposium

- ▶ Advancing Clinical Research in Breast Cancer, I. Tonev
- ▶ Evolving Paradigms in Lung Cancer Trials, B. Iliev
- ▶ Innovations in Prostate Cancer Clinical Trials, K. Koynov

## POSTER SESSION 09.00 – 19.00

19.40 – 20.00 Poster Awards

20.00 – 23.00 Dinner

## SUNDAY, MAY 11, 2025 (DAY 3)

08.30 – 09.00 Check out of the hotel

## Hall Monovetz

16.00 – 16.40 Metastatic Uveal Melanoma – from Diagnosis to Treatment - Medison Symposium

Moderator: Al. Gerasimov

- ▶ The Key to a New Therapeutic Opportunity in Patients with Metastatic Uveal Melanoma is their HLA Status, E. Naumova
- ▶ Emerging New Strategies and Learnings from Tebentafusp in mUM, S. Nedeva

16.40 – 17.00 A New Hope for Patients with Platinum-Resistant Ovarian Cancer: Mirvetuximab Soravtansine, P. Balikova - AbbVie Lecture

17.00 – 17.20 Improving Outcomes with First-Line Maintenance Therapy in Patients with Ia/mUC: the JAVELIN Bladder 100 Study Supported by Real-World Data, A. Changalova - Merck Lecture

17.20 – 18.20

- ▶ Treatment Approach in HR+, HER2- EBC, with High-Risk and Nodal Involvement - Practical Experience and Efficacy Data in MonarchE Clinical Study, M. Musin
- ▶ Treatment of HR+,HER2- EBC, with High-Risk and Nodal Involvement –Personal Experience Sharing and Safety Data in MonarchE Clinical Study, S. Nedeva
- ▶ Practical Experience Sharing and Treatment Approach in HR+,HER2- MBC, with High-Risk - Efficacy Data in Monarch 2 Clinical Study, I. Kazmoukov

Eli Lilly Symposium

Moderator: I. Tonev





**Rossitza Krasteva, MD, PhD**

## **Welcome to the XII International Meeting of Young Oncologist Club**

**Hyatt Regency Pravets, May 9-10, 2025**

Dear colleagues, dear friends,

It is a great pleasure and honour to welcome you to the XII International Meeting of the Young Oncologist Club, held under the inspiring theme “Transforming Cancer Care Therapy: Art Meets Science.”

This event has grown into a remarkable tradition - a platform that not only unites young professionals from across disciplines but also fosters meaningful dialogue with leading experts in the field. Over the next two days, we will explore the latest advances in oncology through a multidisciplinary lens - bringing together medical oncologists, surgeons, radiation oncologists, gastroenterologists, pathologists, radiologists, and nuclear medicine specialists.

The program ahead is rich and dynamic:

- ▶ Cutting-edge lectures from renowned speakers
- ▶ Two interactive sessions dedicated to clinical case discussions
- ▶ A focused Masterclass designed specifically for pathologists
- ▶ And, most importantly, a collaborative environment to share best practices and innovative approaches.

This meeting emphasizes the vital role of molecular diagnostics, precision medicine, and the power of the multidisciplinary team in reshaping cancer care. We are not only embracing the science behind the disease - we are also recognizing the art of treating each patient as unique.

In this spirit, we invite you to be curious, to challenge ideas, and to share your vision. Because today, transforming cancer therapy is not just about keeping up with progress - it is about setting new standards, together.

Let us begin this journey where knowledge meets creativity, and where science becomes art - for the benefit of every patient we serve.

Welcome to the future of oncology. Welcome to the XII International Meeting of the Young Oncologist Club.

A handwritten signature in blue ink, likely belonging to Dr. Rossitza Krasteva, located at the bottom right of the page.

Dr. Rossitza Krasteva  
President of Young Oncologist Club Bulgaria







**Dr. Petya Balikova**

Dr. Petya Balikova is a deputy head at the department of Medical Oncology in MHAT “St. Sofia” since June 2021. Dr. Balikova graduated with distinction from Plovdiv Medical University, Bulgaria and specialized Oncology at University Hospital “Tsaritsa Yoanna” ISUL – Sofia, Bulgaria /2015-2021/. Her clinical and scientific interests include breast, lung, pancreatic and colon cancer, as well as melanoma and head and neck cancer. Along with her clinical work she participated in many clinical trials phase II, III and IV and keeps her focus on the novel treatments in oncology - targeted therapy and immunotherapy. Dr. Balikova attended various preceptorship courses in Italy, France and Germany and is an active member of the managing board of Young Oncologist Club Bulgaria, Bulgarian Association of Medical Oncology and European Society for Medical Oncology. Dr. Balikova was distinguished with the special award for young physicians - “You are our future” of the Bulgarian Medical Association for 2022.



**Dr. Georgi Ganev**

Dr. Georgi Ganev studied Medicine at Medical University of Sofia from 2014 to 2020. During those years he volunteered at peer-to-peer support groups for lecturing. From 2021 to 2022 he worked at the Nuclear Medicine ward at Complex Oncology Center Stara Zagora. From May 2022 he is a part of Uni Hospital team as a first-year resident in Radiation Oncology. His interests include radiation therapy in early breast cancer and brain tumors. He also likes teaching university students.



**Sofia Baka, MD, PhD**

Dr. Baka is a Consultant Medical Oncologist and works at the InterBalkan Medical Center of Thessaloniki, Greece. She is the Director of the Medical Oncology Department-Clinical Research Unit. She has graduated the Medical School of the Aristotle University of Thessaloniki in 1993, and completed her Specialist Training in Internal Medicine in 2001, at the Hippocraton University Hospital of Thessaloniki.

Following, her PhD, on lung cancer immunotherapy, from the Biology Department of Aristotle University, Medical School, Dr. Baka has worked as Clinical Research Registrar and Specialist Registrar in Medical Oncology, for 5 years, at the Christie Hospital in Manchester and completed her Specialist Training in Oncology (CCST). During that time she has attended the Master Course in Oncology, University of Manchester. She has written several papers in major scientific medical journals. Dr. Baka has participated as Principal or Co-Investigator in several clinical trials.



**Prof. Mauro Papotti**

## **Challenges for Pathologists in Lung Cancer Diagnosis**

Mauro Papotti and Eleonora Duregon, University of Turin, Italy

**Introduction** - Despite the criteria for lung cancer pathological diagnosis, as recommended by the current WHO 2021 Classification of Thoracic Tumors [PMID: 34808341], are apparently easy and straightforward, several challenges still exist in the diagnostic work up. For cytology & small biopsies, these include small specimen handling & diagnosis, morphological subtyping, molecular profiling & PDL1 testing on biopsies. Regarding surgical specimens, issues involve prioritization of morphological versus molecular diagnosis, subtyping & invasion assessment, tumor grading & staging (TNM 9<sup>o</sup> edition), characterization of multiple tumor nodules, assessment of major pathological response to Neoadjuvant Chemo & Immuno-Oncology (NCIO), role of TIME & TILs, lung cancer reporting, and -last but not least- the role of computational pathology with leveraging AI and deep learning algorithms to predict response to targeted therapy.

**Morphology** – Microscopic characterization includes the definition of histological tumor type, tumor grade and stage. While grading criteria for pulmonary squamous carcinoma have not been established yet, adenocarcinomas should be further subtyped into in situ, minimally invasive and invasive, reporting the predominant growth patterns. At least 20% of solid, micropapillary or complex gland areas are associated to a G3 grading [PMID: 36630101]. Large cell carcinoma is a fading group of undifferentiated neoplasms that should be addressed to squamous or adenocarcinoma or neuroendocrine (NE) categories. The latter in fact encompass not only small cell lung cancer (SCLC) but also rare high grade large cell NE carcinomas (LCNEC), as well as the well differentiated carcinoids that include typical, atypical and the novel “carcinoid with high proliferation” subtypes [PMID: 36630101].

**Small specimen handling & diagnosis** - Up to 70% of lung cancers are diagnosed on small biopsy or cytology specimens only, being inoperable. The limited available material has also to be spared for molecular analyses, after standard morphological and immunohistochemical profiling (with nuclear markers TTF1, p40 and INSM1) [PMID: 36630101]. The reporting of small specimens and cytology follows the recommendations of the WHO blue book of Lung Cytopathology released in 2022.

**Assessment of major pathological response (MPR)** - Neoadjuvant Chemo & Immuno-Oncology (NCIO) is largely employed in lung cancer treatment having several advantages such as compliance, killing of micro-metastases, increased operability, sensitization of the immune system, among others. Irrespective of the different therapeutic regimen, in case of surgery, the pathologist has to follow a strict protocol to examine the primary tumors (IASLC criteria) and sometimes the regional lymph nodes (ir-PCR criteria), as well. MPR is defined as the presence of less than 10% vital tumor cells in the primary tumor, as opposed to pathological complete response (pCR) that claims the complete absence of vital cells in the tumor bed. Recommendations on how to assess MPR have been released by IASLC since 2020 and include the exact determination of the tumor bed and of areas of necrosis, fibrosis or viable tumor cells [PMID: 38692811, PMID: 39461426]. Additional parameters include the evaluation of tumor burden and PDL1 expression levels that when elevated are associated to a higher response to NCIO [PMID: 38680859].

**Predictive markers & Molecular diagnosis** - Molecular tests are increasingly used as part of the essential diagnostic work up of lung cancer, also thanks to the widespread use of high throughput techniques such as next generation sequencing (NGS). [PMID 37356358, PMID: 36630101, PMID: 37936491]. In non-squamous NSCLC, current guidelines from international associations recommend assessment of KRAS, EGFR, BRAF, HER2 mutations, as well as ALK, MET, ROS1, RET, NTRK gene alterations [PMID: 36630101; 38199926]. A major limitation of molecular tests is tumor heterogeneity, which might explain therapy failure in cases with incomplete or insufficient molecular characterization due to small sample size [PMID: 38310709]. In NE neoplasms, biallelic inactivation of TP53 and RB1 genes is a feature of SCLC and of some LCNECs. The latter may also share KRAS and STK11/KEAP1 mutations reported in NSCLC. The molecular profile of SCLC is being increasingly enriched from the four initial molecular





## Prof. Wieland Voigt

subtypes (ASCL1, NeuroD1, POU2F3 gene mutated and the “triple negative” subtype) to rare forms of Rb gene wild type status (6%) or having YAP expression and SMARCA4 deficiency [PMID: 38237798, PMID: 38180245, PMID: 35792876]. Such molecular subtype landscape may drive the future therapeutic scenarios of SCLC, despite the apparent morphological similarity of the vast majority of cases [PMID: 39756451].

Regarding immunotherapy, the determination of predictive markers of response is an essential step, with specific regard to PDL1 determination in tumor specimens. Strict criteria for analysis are required, restricting assessment to tumor cell component. Other predictive biomarkers for immunotherapy also exist for lung cancer, as reviewed by the IASLC in recent years [see PMID: 36184066, PMID: 38625026].

**Future challenges & Role of AI** – The assessment of morphological, immunophenotypic and molecular parameters (e.g. Ki67 index, biomarkers) can take advantage from new techniques (e.g. third generation sequencers, multiplex immunohistochemistry) and from computational pathology with AI algorithms based on deep learning. The latter may include: a) the ability of predicting gene alterations or propensity for brain metastases directly from the standard hematoxylin and eosin-stained slides; b) quantification of tumor cellularity and different cell type abundance as a prognostic feature; c) assessment of MPR with optimal concordance with conventional visual analysis [PMID: 39799232, PMID: 38433721; PMID: 38070597].

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Present position: Full Professor of Pathology, University of Turin; Head, Division of Pathology, Città della Salute Hospital, Turin, Italy; Vice-Chair, Medical School, University of Turin

Resident program training in Oncology (University of Modena, 1983) and in Pathology (University of Torino, 1991).

**DIAGNOSTIC ACTIVITY** – Since 1982, diagnostic cytology exfoliative and fine needle aspiration biopsies and of pulmonary, thoracic and endocrine surgical pathology. Application of immunohistochemistry and molecular techniques to histological and cytological specimens for diagnostic, prognostic and predictive purposes.

Teaching activity - Pathology courses at the University of Turin First Medical School in Turin (years 1992-2003 and from 2015-date) and Second Medical School in Orbassano (from 1997-date). Pathology course at the Laboratory Technician School, University of Turin (1994-date). Cytopathology and surgical pathology courses at the Post-graduate Schools in Pathology, Oncology, Respiratory Medicine, Thoracic Surgery and Endocrinology (years 1987-date).

**SCIENTIFIC ACTIVITY** – Thoracic pathology (lung and mesothelium), Endocrine pathology (parathyroid, thyroid and adrenal glands as well as neuroendocrine tumors) and immuno-histochemical and molecular biology techniques applied to diagnostic pathology and aspiration biopsy cytology. Receptor analysis in endocrine tumors.

Over 400 papers in peer review journals e 420 abstracts.

Member of the International Academy of Pathology (IAP), European Society of Pathology (ESP), Società Italiana di Anatomia Patologica (SIAPEC), Endocrine Pathology Society, International Association for the Study of Lung Cancer (IASLC), European Neuroendocrine Tumor Society (ENETS).

Since 1982 obtained grants for research projects funded by the National Research Council (Rome), the Italian Ministry of University and Education, the Regione Piemonte (Turin), Fondazione Berlucci, Compagnia di San Paolo (Turin) and the Associazione italiana per la ricerca sul cancro (AIRC, Milan).

Member of the Editorial Board of Pathologica, Virchows Archives, Archives of Pathology, J Endocrinological Investigations, American Journal of Clinical Pathology, Journal of Pathology, J Clinical Pathology.

1990-1999 Secretary and 2000-2003 President of the “European School of Pathology (EScoP)”, founded in Torino by the European Society of Pathology (ESP).

## Innovative Diagnostics to Aid the Management of Screening Detected Lung Nodules

Lung cancer remains the leading cause of cancer-related mortality worldwide, with over two-thirds of patients still being diagnosed at an advanced stage. Cigarette smoking is the most significant risk factor. Annual low-dose chest CT screening has been shown to reduce lung cancer-related mortality, as demonstrated by recent lung cancer screening studies. However, several challenges persist in low-dose chest CT-based lung cancer screening, including the optimal selection of individuals for screening programs, personalization of screening intervals, specifying individualized follow-up schedules for nodule management, and addressing incidental findings.

Programs like the U.S. national lung cancer screening initiative primarily select participants based on age and smoking history, but these eligibility criteria miss approximately half of lung cancer cases. Therefore, a more comprehensive assessment of an individual's baseline lung cancer risk is needed. In addition to smoking history and age, risk models should consider factors such as gender, ethnicity, comorbidities like COPD, occupational exposures, environmental factors, and specific biomarkers.

While most national screening programs currently recommend annual screening, recent evidence suggests that screening intervals could be personalized based on an individual's baseline risk. This baseline risk could be determined by the results of initial low-dose chest CT, or a combination of clinical, occupational, and environmental factors alongside biomarkers. Currently, approximately 25% of individuals screened show lung nodules, and of those, 10-30% are indeterminate, requiring further diagnostic evaluation.

Combining nodule volume and biomarkers could help guide the decision between biopsy or further follow-up, as well as inform appropriate follow-up intervals. Ultimately, personalized risk stratification using clinical (including occupational and environmental) factors or a combination of clinical and biomarker data could improve the effectiveness of lung cancer screening programs. This approach might reduce the number of unnecessary serial CT scans, minimize “lung cancer screening-related side effects,” through better nodule risk classification and thereby identification of patients who require interventions such as biopsies or surgeries. This might further improve the cost efficiency of screening programs.

In my lecture, I will provide an overview of key aspects of lung cancer screening, focusing on the role of clinical risk factors and biomarkers throughout the screening process. With particular attention to the management of indeterminate lung nodules detected during screening, I will summarize the current evidence on innovative clinical scores and biomarkers in greater detail.

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Professor Voigt studied medicine at the Medical University of Hannover and Martin Luther University Halle-Wittenberg in Germany. After graduating, he pursued an additional two years of training in molecular and tumor biology and pharmacology at the Roswell Park Cancer Institute in Buffalo, USA. He then continued his career at Martin Luther University Halle-Wittenberg, where he became a board-certified specialist in Internal Medicine, Hematology, Oncology, and Palliative Care. He holds a doctoral degree in medicine and is habilitated in Internal Medicine and Oncology.

After 13 years of service in various leadership roles at the University of Halle, Professor Voigt became the Global Chief Medical Officer at Siemens Healthineers in 2011. As his responsibilities expanded, he was also appointed to a professorship at Steinbeis University for Innovation in Oncology, as part of the Steinbeis Transfer Institute for Medical Innovations and Management.

In 2018, seeking a new challenge, Professor Voigt founded his own company focused on providing medical education and advisory services to the healthcare industry. His primary interest lies in advancing biomarkers and technologies to enable the personalization of cancer detection and management. Building on this expertise, he recently founded a second company dedicated to the discovery and development of breath-based biomarkers, with a focus on early disease detection in lung cancer and gastrointestinal diseases.





**Rossitza Krasteva, MD, PhD**

Dr. Rossitza Krasteva graduated as a doctor at the Medical University of Sofia in September 1994 and has two acquired specialties – Internal Medicine (2001) and Oncology (2005). She specialized in university hospitals in Turin (Italy), Athens (Greece), Munich (Germany), Basel (Switzerland). In 2024 she acquired the scientific degree “doctor”.

From 1995 to 2012 she worked at the Clinic of Medical Oncology at the University Hospital “Tsarina Ioanna – ISUL” in Sofia. From 2013 to 2014 she worked at the Department of Medical Oncology at the Hospital “Serdika”, Sofia. Since November 2015 she has headed the Department of Medical Oncology at the Oncology Center at Uni Hospital in Panagyurishte. Since September 2019, Dr. Krasteva has headed the Oncology Center at Uni Hospital, which includes the Department of Medical Oncology, the Department of Radiation Therapy and the Department of Nuclear Medicine.

She is a consultant in oncology committees and in other hospitals in Bulgaria. Her professional and scientific interests are mainly in the field of medical oncology (breast cancer in young women, lung cancer, colorectal carcinoma, gastrointestinal stromal tumors).

Dr. Krasteva has participated in a number of national and European congresses. She is an active member of the European Society of Medical Oncology (ESMO), the Bulgarian Medical Union, the Bulgarian Association of Medical Oncology (BAMO), the European Society of Radiation Therapy (ESTRO), and the Balkan Union of Oncology.

Dr. Krasteva is the President of the Young Oncologist Club and the Society of Oncology Bulgaria.

Dr. Krasteva is the laureate of the prestigious annual award of the St. Ivan Rilski Foundation for contribution to healthcare for 2017 in the "Oncology" category. She is the winner of the "Doctor of the Year" award of the MHAT Uni Hospital for 2018.



**Prof. Lothar Pilz**

Study of Mathematics and Physics 1973 –1978 at the Johann-Wolfgang-von-Goethe-University, Frankfurt and Eidgenössische Technische Hochschule (ETH), Zürich, Switzerland;

1979-1980 Research Assistant, University of Heidelberg, Heidelberg

1981- 2011 Senior Researcher and Consulting Statistician, Department Mathematical Models / Biostatistics, German Cancer Research Center, Heidelberg

Since 2011 Senior Consultant for Statistics, Medical Faculty Mannheim, University of Heidelberg, Mannheim

Since 2013 Appointed Statistical Consultant, Medical University Bialystok, Poland



**Prof. Christian Manegold**

## **Resectable Non-Small Cell Lung Cancer: Peri-operative Treatment Options**

Christian Manegold

## **Resectable Non-Small Cell Lung Cancer: Comparison of Effectiveness for Peri-operative Approaches**

Lothar R Pilz

Restricting on resectable non-small cell lung cancer (NSCLC), stand of today, there are no or little comparative data published to guide the choice between neo-adjuvant, adjuvant, neo-adjuvant, or peri-operative based regimens. The peri-operative treatment for NSCLC includes the use of cytotoxic anticancer agents, molecular targeted agents, and immuno-checkpoint inhibitors and changed the treatment modes for stage IIB to III NSCLC. The main primary endpoints in studies leading to approval are event free survival (EFS) and disease-free survival (DFS) and so far, already published, reported clinical studies show comparable benefits in EFS or DFS. Cross-trial comparisons are not appropriate methods to draw conclusions about treatment efficacy or guide choice of therapy.

Also seen is that there is a large heterogeneity of pathological responses (major pathologic response, MPR and pathological complete response, pCR) in published neoadjuvant trials for NSCLC. Some clinical trials of peri-operative treatment for resectable NSCLC combined immune checkpoint inhibitors (ICIs) with chemotherapy (CT) show promising treatment effects, where ICIs can be offered in various combinations for patients with tumors that are 4 cm in size or greater, or involving lymph nodes.

Completed current peri-operative trials do not (and perhaps cannot) assess the contribution of treatment phase. Thus, in general, beside the missing measurements there is a concern for patient overtreatment and proposed co-operative group trials do not address this issue fully.

Fact is the heterogeneity of pathological responses in published neo-adjuvant trials for NSCLC. So various pCR and MPR rates were published in recent neo-adjuvant immunotherapy trials for operable NSCLC where MPR is varying from 17% to 85% and pCR is varying from 5% to 71%. The effect behind may be the molecule itself and the technique used for response assessment.

Multi-arm trial designs may allow for testing novel peri-operative therapies while addressing the contribution of effects of each treatment phase (neo-adjuvant and adjuvant). In this case, a pre-specified comparison for the peri-operative versus each individual phase arm(s) can support contribution of phase considerations for study design and analysis. Also, pCR and MPR can be used as an intermediate end point and aid for the selection of patients for adjuvant therapy in case the data are given in the studies.

Therefore, for future peri-operative trial designs it is proposed to follow similar designs, exacerbating concerns for overtreatment. And two-arm trials may only be acceptable if given in the neo-adjuvant phase or in the adjuvant phase only. In the peri-operative setting, a multi-arm trial designs may be a good choice to focus on treatment effects of investigational drugs opening the opportunity to isolate the treatment effects given in the neo-adjuvant phase from adjuvant phase. Suggested designs for future trials evaluating investigational drugs in peri-operative management of NSCLC were four-arm and three-arm designs evaluating the effects of the novel drug in the neo-adjuvant, (adjuvant), and neo-adjuvant followed by adjuvant phases.





Dr. Christian Manegold, studied medicine in Berlin and Heidelberg, Germany, graduating with a Dr. from of the Ruprecht Karls University in Heidelberg in 1974. He took up a residency in the pathology department of the same university in 1976 and worked in the USA for 3 years, before returning to Heidelberg in 1979. He gained board certification in internal medicine and in haematology/oncology in 1985 and 1986, followed by a professional appointment as Consultant in Haematology/Oncology at the Thoracic Hospital in Heidelberg, and Head of Interdisciplinary Thoracic Oncology at the Department of Surgery, Heidelberg Medical Centre Mannheim, Germany, a post he held from 2004 to 2013. He was appointed Professor at Ruprecht Karls University in Heidelberg in 1996. He has been the Senior Advisor at the Interdisciplinary Cancer Centre in Mannheim since 2013. Professor Manegold has extensive experience as a clinical investigator, and national and international trial leader as well as a member or leader of independent data monitoring committees (IDMC) in numerous clinical trials in oncology, both in thoracic cancers and other indications. Professor Manegold is a member of the German Cancer Society, the European Society of Medical Oncology (ESMO), the American Society of Clinical Oncology (ASCO), and the International Association for the Study of Lung Cancer (IASLC). He was a Chairman of the European Organisation for Research and Treatment of Cancer Lung Cancer Group (EORTC-LCG) from 2000 to 2003. He served as a Chairman of the IASLC Ethics/Sponsorship Committee from 2007 to 2009 and as member of the IASLC Board of Directors from 2011 to 2015.



**Prof. Christoph C. Zielinski**

**Precision Immunotherapy: Biomarkers and Individualized Strategy**

Christoph Zielinski  
Central European Cooperative Oncology Group (CECOG)

Immune Checkpoint Inhibitor treatment has been introduced into the treatment of non small cell lung cancer ten years ago. Although PD-L1 – particularly in cases of high to very high overexpression - has been used as a prognostic and predictive variable, other biomarkers have been developed to overcome its lack of reliability of PD-L1 in particularly cases of low or absent overexpression. Moreover, a variety of clinical “bio”markers including the development of immune-related adverse events and the pathological response to immune checkpoint inhibitor-containing neoadjuvant therapy have emerged as important prognosticators for the further course of disease.

Thus, besides PD-L1, a series of other biomarkers have gained attention which include tumour mutation burden which identifies tumours – similarly to neoantigen expression - as “foreign” and sets them apart from non-neoplastic (“self”) tissue, Others include the interferon-gamma-genotype, lymphocyte infiltration providing effector cell function for the elimination of tumour cells, microsatellite instability, the tumour microenvironment, and circulating tumour DNA.

Extensive analyses have shown that all of these biomarkers – although frequently overlapping – identify tumours as separate and singular entities. In an attempt to further refine methods of identifying patients who would respond best to treatment with immune checkpoint inhibitors, computer programs including artificial intelligence have been developed which need to be further tested in order to arrive at “precision treatment” of patients with certain characteristics which would qualify them for optimal treatment with this group of compounds which will be expanded in the very near future. All of these aspects will be discussed in detail and clinical examples as well as the results of clinical studies will be presented which support the various mentioned approaches.

Prof. Christoph C. Zielinski is currently Director of the Vienna Cancer Center of the Vienna Hospital Association and the Medical University Vienna, Austria, From 2001 to 2017 he was Director of the Clinical Division of Oncology, from 2004 to 2017 Director of the Department of Medicine I and from 2010 to 2017 Director of the Comprehensive Cancer Center of the Medical University Vienna, Austria.

Since 1999, Prof. Zielinski is president of the Central European Cooperative Oncology Group ([www.cecog.org](http://www.cecog.org)), which is conducting widely published clinical trials and educational activities in 23 countries of Central and Southeastern Europe involving env. 150 cancer institutions in the area.

Prof. Zielinski completed his medical training at the University Hospital Vienna and began his career with a position as a research fellow at the Cancer Research Center at Tufts University, Boston, Massachusetts. 1992, he became a full professor of Clinical Immunology and Medical Oncology at the Medical Faculty of the University of Vienna, Austria.

Prof. Zielinski’s recent clinical research activities cover a wide range of cancer therapies with particular focus on clinical trials, breast and lung cancer research and treatment, experimental targeted treatment and immunotherapies. He has published more than 630 original papers and reviews in peer-reviewed journals and books with an h-index of 65 and citations exceeding 19.000.

In 2013, Professor Zielinski received an honorary doctorate degree from Titu Maiorescu University in Bucharest, Romania, and is an honorary member of the Polish Society for Oncology (2016). He is a member of the European Society for Medical Oncology and served on the Executive Board and as chair of the Fellowships and Awards Committee from 2014–2017. Since 2019, Prof. Zielinski is a member of the ESMO Council and since 2016, Editor in Chief of the internet-only open access peer-review journal “ESMO Open – Cancer Horizons” ([esmoopen.bmj.com](http://esmoopen.bmj.com)).

Prof. Zielinski is also a member of the American Society of Clinical Oncology and the American Association for Cancer Research.







Prof. Jasna Mihailovic

Clinical Role of F-18 FDG-PET/CT in Differential Diagnosis of Benign and Malignant Positive Lung Lesions

Jasna Mihailovic<sup>1,2</sup>

<sup>1</sup>Department of Nuclear Medicine, Faculty of Medicine, University of Novi Sad, Novi Sad, Serbia

<sup>2</sup>Division of Nuclear Medicine, Oncology Institute of Vojvodina, Sremska Kamenica, Serbia

Each year, over 150,000 new cases of solitary pulmonary nodules (SPNs) are diagnosed in the United States. While the majority of SPNs are benign, approximately 30-40% are primary malignancies, most of which are in TNM stage IA. Patients in this stage have a 5-year survival rate ranging from 61% to 75%. Diagnosing SPNs remains a significant clinical challenge due to the small size of the lesions and the lack of distinguishing CT features between benign and malignant nodules. Moreover, about 50% of lung cancer patients miss the optimal timing for surgery, which results in a 10-15% decrease in their 5-year survival rate. Therefore, improving the diagnostic accuracy of SPNs is crucial for determining treatment options and patient prognosis. It has long been hypothesized that certain CT characteristics of pulmonary nodules could help differentiate between benign and malignant lesions. Specifically, irregular, “spiculated” nodules are often considered more likely to be malignant, while round lesions with well-defined, smooth edges are generally seen as benign. The role of tissue density has also been debated in several studies but remains inconclusive. Fat density (attenuation values between 120 HU and 40 HU) may indicate hamartomas, while attenuation values greater than 200 HU suggest calcification. Positron emission tomography/computed tomography (PET/CT) using 18F-fluorodeoxyglucose (18F-FDG) is a valuable imaging tool for diagnosing and differentiating SPNs. PET/CT combines anatomical, morphological, and metabolic information in one examination, making it an essential diagnostic method for evaluating SPNs. PET/CT can help avoid unnecessary percutaneous biopsies in cases where the SPN is negative on PET/CT, as lung biopsies carry a 20% risk of pneumothorax. The sensitivity, specificity, and accuracy of PET/CT in diagnosing SPNs are approximately 98%, 78%, and 92%, respectively. Recent research has highlighted the potential role of shape and texture features from PET/CT in characterizing suspicious pulmonary nodules. SUV-related parameters, in particular, have shown better diagnostic performance than MTV and TLG. However, PET/CT diagnosis of SPNs has some limitations, including the possibility of false positives and false negatives. Since FDG is not specific to tumors, it can also accumulate in infections or inflammatory conditions such as tuberculosis, invasive aspergillosis, chondrohamartomas, or abscesses, leading to false-positive results. Conversely, factors like hyperglycemia, low tumor metabolic activity, and small lesion size may contribute to false-negative results. Despite its advantages, PET/CT is not yet a routine method for SPN evaluation due to its high cost and limited availability.

Keywords: F-18 FDG PET/CT, Single Pulmonary Nodule (SPN), Differential Diagnosis

Professor Jasna Mihailovic is the Head of the Department of Nuclear Medicine at the Oncology Institute of Vojvodina, Serbia. She is also Full Professor and Head of Department of Nuclear Medicine, Medical School, University of Novi Sad. She is Past President of Serbian Society of Nuclear Medicine (from October 2016 till November 2020).

She trained in Nuclear Medicine and sub-specialized in Oncology; obtained her MSc and PhD degree from the University of Novi Sad in Imaging of thyroid nodules.

Previous to this Professor Mihailovic had several international fellowships, namely in Medizinische Hochschule Hannover, Berlin, Klinikum Steglitz, Berlin, Hospital I Provincial de Barcelona, Barcelona, Spain, FU Berlin, Klinikum Steglitz, Berlin, Royal Melbourne Hospital in Melbourne, Australia, Centre Leon Berard in Lyon, France, Nuklearmedizinische Klinik, TU-Muenchen, Germany Klinik für Nuklearmedizin der Universität Bonn, Germany, Klinik und Poliklinik für Nuklearmedizin, Ludwig-Maximilians-Universität, Klinikum Grosshadern, München and Cornell University, New York Presbyterian Hospital, Division of nuclear medicine, New York, New York, US.

She was admitted as a member of Academy of Medical Sciences Serbian Medical Society in 2022. Prof Mihailovic is a member of SNMMI. She served as a member of the Thyroid Committee of European Association of Nuclear Medicine, in charge for education in a period of 2014-2020. She has delivered numerous invited talks, presented research papers at national & international meetings, organised multiple international and national nuclear medicine meetings as either President of Organising Committee or member of Scientific committees. Prof Mihailovic has publications in reputed peer-reviewed journals and written several book chapters. Professor Mihailovic is a member of the Editorial board and reviewer for journals, including EJNM, NMC, Annals of Thyroid Imaging, International Journal of Radiology and European Journal of Endocrinology. Her sub-specialist subjects are thyroid imaging, PET-CT and cancer imaging.



Dr. Xuan SU

Multiple Cohort, Open-Label, Exploratory Clinical Study of Trilaciclib in Myeloprotection in First-Line Combination Chemotherapy Regimens for Advanced Solid Tumors – Interim Data Analysis

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Hospital, Third Hospital of Shanxi Medical University, Taiyuan, Shanxi, China

Background: Myelosuppression (CIM) is a common toxicity of cancer chemotherapy. Trilaciclib is a highly potent, selective, and reversible CDK4/6 inhibitor designed to protect HSPC, highly dependent on this pathway during chemotherapy by intravenous (IV) administration, thereby reducing HSPC killing by ascending chemotherapy, and transient T-cell suppression favourably alters the tumor immune micro-environment. Through the literature search, it is found that Trilaciclib can theoretically be used for bone marrow protection and affect the efficacy of anti-tumor chemotherapy.

Methods: Study enrolled advanced first-line chemotherapy-based solid tumors patients, which were administered Trilaciclib (240 mg/m<sup>2</sup>) intravenously over 30 minutes via CDE within 4 hours prior to daily chemotherapy. To observe the incidence of CIM and the efficacy of anti-tumor therapy.





Assoc. Prof. Nataliya Chilingirova

Results: From October 2023, 20 patients have been enrolled, and 15 patient data has been analyzed. There were 14 males and 1 female; the median age was 69.5 (56-84) years; 4 lung squamous cell carcinoma patients (26.7%), 2 lung adenocarcinoma patients (13.7%), 9 small cell lung cancer patients (60.0%), and 1 endometrial cancer patient (6.7%). Ten patients (66.7%) received primary prevention and 6 (33.3%) received secondary. As of the data statistics, 8 patients (53.3%) received the study drug in Cycle 1, 3 (20.0%) in Cycle 2, 4 (26.7%) in Cycle 3 and 1(6.7%) in Cycle 4. Chemotherapy regimens were according to clinical guidelines. CIM occurred as shown in the table.

| CIM | %     | CIN | %     | CIT | %    | CRA | %    |
|-----|-------|-----|-------|-----|------|-----|------|
| I   | 6.3%  | I   | 11.3% | I   | 7.5% | I   | 0.0% |
| II  | 5.0%  | II  | 7.5%  | II  | 1.9% | II  | 5.3% |
| III | 0.6%  | III | 1.9%  | III | 0.0% | III | 0.0% |
| IV  | 0.0%  | IV  | 0.0%  | IV  | 0.0% | IV  | 0.0% |
| ALL | 11.9% | ALL | 20.8% | ALL | 9.4% | ALL | 5.3% |

Conclusion: As of the reporting date, all patients had not experienced Grade III or higher CIM. More attention is paid in CIT, which shows that Trilaciclib controls platelets well, providing a better management of CIT. Trilaciclib showed clear myeloprotective effects in lung and endometrial cancer, effectively improving the safety of chemotherapy in first-line patients.

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Dr. Bozhidar Iliev

Dr. Bozhidar Iliev was born on September 10, 1986 in the town of Svishtov. He graduated in Medicine from the Medical University, Pleven, in 2012.

From 2012 to 2014, Dr. Iliev worked at AIPAMP Dr. Jeanta Demireva, Plovdiv (the largest individual practice in Bulgaria). From 2015 to July, 2019 he worked as a specialist doctor at the Clinic of Medical Oncology, University Hospital Ajibadem City Clinic. Since September, 2019, Dr. Iliev is a specialist doctor in the Department of Medical Oncology, Uni Hospital, Panagyurishte.

In 2024, Dr. Bozhidar Iliev takes the exam of the European Society of Medical Oncology (ESMO) with the maximum number of points.

Immunotherapy in the Treatment of SCLC

In contrast to the rapidly changing therapeutic algorithms in non-small cell lung cancer (NSCLC), where the introduction of targeted and immunotherapies has radically changed the treatment approach, small cell lung cancer (SCLC) has not seen therapeutic changes for many years. As a result of the failure of many potential molecules (such as VEGF- inhibitors, IGFR, mTOR, EGFR, HGF and P53 vaccines) in clinical trials to demonstrate efficacy against standard therapies, SCLC has long been considered a challenge for clinicians and researchers, and an area of unmet therapeutic needs. For many years, no study could report results against the standard in the treatment of advanced extensive-stage SCLC - cisplatin or carboplatin plus etoposide. Today, immunotherapy is making such progress.

Graduated Medical University in Sofia, Bulgaria by doing part of her medical training at the Medical Oncology Clinic in the University Hospital in Zurich, Switzerland. Still as a medical student she worked as a volunteer in different oncology centres in the country - National Oncology Centre in Sofia, and the Complex Oncology Centre in Stara Zagora. Right after graduating from MU Sofia, she started her residency at the National Oncology Centre.

PhD Thesis: Lung Cancer – individualizing treatment approach using NGS (next generation sequencing based), a scientific work prepared for the first time in the country. Her scientific interests are mostly lung cancer, sarcomas and rare tumours. She did part of her training (fellowships) at the university Hospital in Vienna and Wilhelminen University Hospital, Vienna. Clinical fellowships at some of the biggest scientific and clinical oncology centres like Memorial Sloan Kettering Cancer. Actively participates in various international clinical trainings, congresses and meetings (ESMO, ELCC etc.). Member of Bulgarian and international societies like ESMO, ASCO, Bulgarian Oncology Educational Academy, Bulgarian Oncology Society. Member of the Executive Board Young Oncologist Club Bulgaria. Master degree in health management.

Became assoc. professor of oncology and introduced for the first time oncology as a part of the educational program for all medical students at the university. Member of the Science and Research Lab for precision medicine in Oncology and Genetics at the Centre of Competence to the Medical University Pleven. Author of more than 50 scientific papers in Bulgarian and international journals. Editor in chief and co-author of the first Oncology Textbook for medical students in the country. Invited speaker to national and international scientific events.

Head of Medical Oncology Clinic at the Center of Clinical Excellence, Pleven.

Speaks German, English and Russian.



Assoc. Prof. Zhelyazko Arabadjiev

Assoc. Prof. Arabadzhiev is the head of the Department of Medical Oncology at Tokuda Hospital/Acibadem City Clinic and the chairman of the Bulgarian Scientific Society of Immuno-Oncology. He is a part-time assistant at the Department of "Propaedeutics of Internal Diseases", Faculty of Medicine at the University of St. Kliment Ohridski". Author and co-author of more than 50 publications in national and international specialized scientific journals. He participated in the publication of manuals, textbooks, monographs and textbooks in the field of cancer treatment.



## Dr. Alexander Gerasimov



Author of two monographs "Immunotherapy and treatment of breast cancer" and "Drug toxicity of immunotherapy in the treatment of oncological diseases". Assoc. Prof. Arabadzhiev is also a member of editorial boards of international and national refereed and indexed scientific publications. Principal investigator and sub-investigator in international multicenter clinical trials. He speaks English, Russian, Italian, and Greek.

His clinical interests are in breast cancer, prostate cancer, lung cancer, immunology and immuno-oncology, targeted therapy and personalized medicine.

As a specialist, he worked successively in the medical oncology clinic of the City Clinic Oncology Center hospital - Sofia and the medical oncology department at the Ajibadem City Clinic Tokuda Hospital - Sofia, and in 2019 he was also elected head of the same department.

Assoc. Prof. Zhelyazko Arabadjiev graduated with honors in medicine in 1997 at Medical University "Prof. Dr. Paraskev Stoyanov" in the city of Varna.

In the period 2009 - 2015 specializes and acquires a specialty in medical oncology at the SBAL of Oncology, Sofia.

In 2020 obtained an educational and scientific degree "Doctor" in the specialty "Oncology" at the Medical University of Varna, where he successfully defended a dissertation in the field of breast cancer treatment.

In 2021, he was appointed to the academic position of "Associate Professor" in the specialty "Oncology".

Assoc. Prof. Arabadjiev also holds a master's degree in the specialty "Health Management" from UNSS, Sofia.

Since 2015 until 2019 is the representative of the European Society of Medical Oncology (ESMO) in Bulgaria.

From 2019 is a member of the Expert Board for the specialty "Medical Oncology" at the Ministry of Health of the Republic of Bulgaria.

Chairman of the Board of the Bulgarian Scientific Society for Immuno-oncology.

Member of Bulgarian, European and American scientific oncology societies.

Several times chosen by his patients in the "Doctors we trust" ranking of the "24 Chasa" newspaper.

Assoc. Prof. Arabadjiev has conducted specializations in leading oncology clinics in Israel, Belgium, Italy, and Germany.



## Dr. Tsvetan Tatarov

Dr. Tsvetan Tatarov was born on June 30, 1987, in Pazardzhik. He graduated in Medicine from the Medical University of Plovdiv in 2012.

From 2012 to 2015, Dr. Tatarov worked in a department of Anesthesiology, Resuscitation and Intensive Care at Pazardzhik Hospital, and from October, 2015 to 2017 – in a department of anesthesiology, resuscitation and intensive care at Uni Hospital Hospital.

Since July 2018, Dr. Tatarov is a specialist doctor in the Department of Medical Oncology, Uni Hospital.

Dr. Tatarov has certificates for Thoracic Anesthesia course in Military Medical Academy, Sofia and a New Therapeutic Opportunities in the Treatment of Left Metastatic Colorectal Carcinoma course in Amsterdam.

Dr. Alexander Gerasimov is a specialist in Medical Oncology, working at the Medical Oncology Clinic in the University Hospital for Active Treatment of Oncology, Sofia. He graduated from Medical University of Sofia in 2012. He received his degree in 2019. Conducted specializations in Sweden, Israel and Italy. As part of the Medical Oncology clinic team, he is involved in the treatment of patients with solid tumors.

Takes part in conducting phase 1, 2 and 3 clinical trials. Participates in local, national and international oncology forums. His research interests are primarily in the field of prostate carcinoma and mammary gland carcinoma.



## Prof. Flora Zagouri

### The Rising Epidemic of Cancer in Younger Adults

Cancer in adolescents and young adults (AYAs), typically defined as individuals aged 15–39, is becoming an increasing public health concern. While malignancies in this age group remain relatively rare, incidence rates have shown a steady rise, particularly in gastrointestinal cancers, appendiceal cancer, and intrahepatic cholangiocarcinoma. Despite advancements in oncology, AYAs face unique challenges due to their distinct biological, clinical, and psychosocial characteristics.

This review aims to examine the epidemiological trends, underlying etiological factors, diagnostic and treatment challenges, as well as long-term outcomes of cancer in younger adults. Additionally, it highlights the need for improved clinical management, specialized care, and increased participation in clinical trials.

As displayed in the literature, hereditary syndromes such as Li-Fraumeni, Lynch syndrome, and Hereditary Breast and Ovarian Cancer account for a subset of cases, while lifestyle and environmental factors—including obesity, sedentary behavior, and viral infections—also contribute to cancer risk. Younger patients often experience delays in diagnosis, limited access to age-specific care, and significant psychosocial burdens related to education, career, fertility, and mental health. Furthermore, they face long-term toxicities from cancer therapies, increasing the risk of secondary malignancies and chronic health conditions.

Prof. Dr. Flora Zagouri MD, is a Professor in the Department of Clinical Therapeutics at the National and Kapodistrian University of Athens School of Medicine, Athens, Greece. She obtained her medical degree from the National and Kapodistrian University of Athens in 2003, completed a residency in medical oncology at the Alexandra Hospital and a fellowship in oncology at the University of Vienna, Austria (AKH Hospital – Comprehensive Cancer Center). Dr. Zagouri is a member of numerous scientific societies and has authored more than 350 publications in peer-reviewed journals (including N. Engl. J of Medicine, Lancet, etc), as well as numerous abstracts and several textbook chapters primarily focusing on cancer diagnosis during pregnancy, breast and gynecological cancer. She has more than 7,000 citations. She is a journal reviewer for several journals (including N. Engl. J of Medicine) and evaluator of research proposals submitted to the European Research Council. Dr Zagouri is an Associate editor in several journals. She has participated in more than 65 clinical trials as a Principal Investigator focused on breast and gynecological cancers.





**Prof. George Zografos**

## **Early Breast Cancer - What is it? Methods of Detection, Surgical Treatment**

### **Prof. George Zografos**

The term early breast cancer describes mainly cases which at presentation and initial assessment are apparently confined to the breast (no metastatic disease), pathologically ductal carcinoma in situ/ infiltrative breast cancer < 5 mm, no matter the status of the axilla and technically operable.

Especially, ductal carcinoma in situ has been regarded as a non-life-threatening disease because it is considered as a premalignant pathology. Therefore, early diagnosis and early onset of the treatment is of paramount importance. Predisposing risk factors might be family history, early age at menarche, late age at first birth, and late age at menopause are related to breast cancer. Examination by annual mammography and supplementary ultrasonography is still the most effective means of early detection. Additionally, there have been important advances in MRI.

Early breast cancer treatment has evolved significantly over the years, regarding surgical treatment such as sentinel lymph node biopsy, breast-conserving surgery, and systemic approaches which include partial breast irradiation, neoadjuvant systemic therapy, and adjuvant systemic therapy. Conservative surgeries, oncoplastic surgeries along with breast reconstruction are nowadays the standard of care. Although the use of targeted new developed drugs has directly increased the survival rate of patients submitted to adjuvant or neoadjuvant systemic therapies, the de-escalation of drugs may also be beneficial in numerous early breast cancer cases. Neoadjuvant therapy, in early breast cancer might be the primary treatment for triple-negative tumors equal to or greater than 2 cm and can be considered in selected cases of tumors between 1 and 2 cm and HER-2-positive tumors equal to or greater than 2 cm, or with axillary lymph node tumors and luminal tumors in which the axilla is involved, and the goal is to reduce the volume of the axillary disease. However, breast cancer treatment must be increasingly personalized and assessed by a multidisciplinary team.

Concerning the prognosis of early breast cancer is generally favorable. Another approach to keeping the disease under control is the elucidation of breast cancer's molecular biological features. Assessment of potential molecular targets can lead to early diagnosis and molecular targeted treatment.

In conclusion, early breast cancer treatment continues to be surgical, although a customized and multidisciplinary approach is now required.

Professor George Zografos has been a Professor of Surgery and Chairman of the 1st Department of Propaedeutic Surgery, Medical School, National and Kapodistrian University of Athens, at "Hippocratio" General Hospital since 2009. From 2020 until today, he is the Head of the Medical Board of National Organization for Health Care Services. Moreover, from 2014 to 2019, he was a Vice Rector of Health and Social Policy Issues, National and Kapodistrian University of Athens.

Professor Zografos has a rich research and writing project history and has participated in numerous funded research programs and clinical studies. As a scientist, he has an important international presence as he is an Assoc. Professor of the Moscow Institute of Physics and Technology, a national representative of Greece at the New European Surgical Association (NESA) and has repeatedly been an invited representative of Greece at the "Committee for the Selection of Research Programs" of the European Economic Community in Brussels.

Professor Zografos has had important administrative positions as President of the Hellenic Surgical Society, President of the Medical Education-Specialties, President of the Board of Directors of the Tsagaris Hospital and member of the Board of Directors of Hellenic Cancer Institute, member of the Board of Directors of the "Agios Savvas" Hospital, and member of the Board of Directors of the Eugenidio Hospital.

Professor Zografos has organized numerous seminars, informative events and programs for preventive screening of the population for cancer.



**Prof. Savelina Popovska**

Prof. Dr. Savelina Popovska graduated from the Medical University of Pleven in 1988. In 1993 she received a specialty in "Pathological Anatomy and Cytopathology", and in 1999 a qualification degree in cytopathology.

Since 2006 she has been an associate professor at the Department of Pathology at the Medical University of Pleven, and from 2008 to present she has been the head of the department. Since 2013 and currently for a second term she is the Vice-Rector for European Integration and International Cooperation. She is a Head of RP 1 in the "Center for Competence - Personalized Oncology and Molecular Pathology.

### **Specialisations:**

Participation in the European program "Leonardo" on a project to improve the teaching skills of assistants involved in teaching foreign students in English - Saint George International Language Center - London, Great Britain, 2001; Specialization in Pathology and Cytopathology at the Cancer Research Center - Tel Aviv, Israel - 2001/2002; Specialization in Bone Pathology Pathology, Institute of Pathology at the Medical University - Vienna, Austria, 2005; Specialization in FISH, CISH and Technique Center of Molecular Pathology, Institute of Pathology at the Medical University of Basel, Switzerland, 2004.

Specialization in FISH technique and immunohistochemical study of triple negative breast tumors-Japan 2007-2008, 2009; Specialization in breast cancer-Department of "Pathoanatomy", Bellaria Hospital, University of Bologna, Italy-2010, Master class in breast pathology-Italy 2015; European School of Molecular Breast Pathology - Pisa, Italy - 2011; Lung Pathology- Graz, Austria 2012, Molecular Pathology- Graz, Austria 2013, 2023

Prof. Popovska is a member of the Bulgarian Pathoanatomical Society, the European Society of Pathology, the Bulgarian Medical Homeopathic Organization, and the Union of Scientists in Bulgaria.



**Assoc. Prof. Svitlana Bachurska**

### **Education and carrier**

2005 – Master of Medicine, Medical University-Plovdiv

2016 – Specialty in General and clinical pathology, Medical University-Plovdiv

2017 – PhD in Pathology, Medical University-Plovdiv

2011-2016 – assistant and senior assistant in Department of General and clinical pathology, Medical University-Plovdiv

2017-2019 – Head of Pathology department, Complex Oncology Center, Plovdiv

2019 to the present – Head of Clinic of General and clinical pathology, USBALO "Prof. Ivan Chernozemski", Sofia

2020-2021 – Assoc. Professor, Department General and clinical pathology, Medical University-Varna

2022-2024 – Guest lecturer, Department of Pathoanatomy, Medical University-Pleven,

2024 to the present – Assoc. Professor, Department of Health care, National Sport Academy "Vasil Levski", Sofia





Dr. Riccardo Mei



Scientific activities

- Specialized trainings in prestigious international expert centers as
- Uropathology in Johns Hopkins, Baltimore, USA (2013) and AKH, Vienna, Austria (2016)
  - Dermatopathology in Institute of Pathology in Ljubljana, Slovenia (2018, 2024)
  - Soft tissue pathology in Institute of Pathology in Padova, Italy (2022)
  - Molecular pathology in Institute of Pathology in Tubingen, Germany (2025)

Publications, researches

Author and co-author of over 50 scientific publications in Bulgarian and foreign journals, co-author of manuals for practical exercises in general and clinical pathology for students in medicine, dentistry and pharmacy in Bulgarian and English, author of 2 monographs and co-author of national guidelines for behavior in urothelial carcinoma, esophageal and gastric carcinoma. Leading investigator of 3 scientific projects in Medical University-Plovdiv, and co-investigator in more then 10 collaborative scientific projects.

Member of Bulgarian Association of Pathology, European Society of Pathology, United States and Canadian Academy of Pathology.

All you Need to Know about the HER2 Updates in Breast Cancer  
Popovska S <sup>1</sup>, Bachurska S <sup>2,3</sup>

- 1 Department of Pathoanatomy, Medical University-Pleven, Bulgaria
- 2 Clinic of general and clinical pathology, USBALO “Prof. Ivan Chernozemski”, Sofia, Bulgaria
- 3 Department of health care, National Sport Academy “Vasil Levski”, Sofia, Bulgaria

The DESTINY-Breast04 trial completely changed the paradigm of targeting HER2 in breast cancer. The results of the study demonstrated that patients with HER2 low expression may benefit from trastuzumab deruxtecan (T-DXd), a novel anti-HER2 antibody-drug conjugate (ADC). Approximately 60% of HER2-negative cases demonstrate low levels of expression defined as 1+ and 2+ (ISH no amplification) by immunohistochemistry. This shift in clinical practice raises a number of questions and challenges - including those related to HER2 analysis and assessment. It highlights the importance of careful evaluation of HER2 expression to select patients suitable for T-DXd.

The aim of this review was to provide insights for understanding how to identify breast cancer patients with new categories HER 2 low and HER 2 ultralow expression in terms of assessment and reporting of HER2 status, testing and analysis methods.

Non-FDG PET/CT in Diagnostic of Breast Cancer

While FDG PET/CT remains a cornerstone in oncologic imaging, its limitations in accurately characterizing certain breast cancer subtypes and detecting subtle metastatic lesions are increasingly recognized. This presentation explores the burgeoning field of non-FDG PET/CT, focusing on the diagnostic potential of novel radiotracers beyond glucose metabolism. We will delve into clinical applications of tracers like FES, FLT, PSMA, and FAPI, demonstrating their ability to provide complementary and, in some cases, superior diagnostic information. Furthermore, we will touch upon the exciting horizon of potential novel tracers, including those targeting specific receptors and metabolic pathways, offering even greater specificity and sensitivity. Through illustrative case studies, we will highlight the utility of these tracers in differentiating benign from malignant lesions, assessing tumor aggressiveness, and monitoring treatment response. We will also discuss the implications of these advancements for personalized breast cancer management, paving the way for more tailored and effective therapeutic strategies. Join us to witness how non-FDG PET/CT, with its expanding tracer portfolio and the promise of future innovations, is redefining the boundaries of breast cancer imaging, offering a glimpse into the future of precision diagnostics.

Academic titles

School of Medicine at the Università degli Studi di Bologna, graduation in Medicine and Surgery (2016)

School of Medicine at the Università degli Studi di Bologna, Residency in Nuclear Medicine (2022)

Work experience

May 2023 - present: Dirigente Medico di I livello (registrar) at the Servizio di Medicina Nucleare e Centro PET della Azienda Univeristario Ospedaliera Policlinico di Modena.

November 2023 – May 2024: Research fellow at the Servizio di Medicina Nucleare dell’Ospedale Policlinico S.Orsola Malpighi University of Bologna; clinical applications of PET in oncology.

June 2023: Visiting fellow at the Universitätsklinik für Nuklearmedizin at the Inselspital of Bern, Switzerland. (Director Prof. Axel Rominger). Experience on long axial field-of-view PET/CT scanners.

June 2022: Visiting fellow at the Universitätsklinik für Nuklearmedizin in Essen, Germany.

Experience on FAPI tracers and RLT with 177Lu-PSMA.

Skills

Experience in whole-body PET/CT scan reading using 18F-FDG, 11C/18F-Choline, 11C-Methionine, 68Ga-DOTA-NOC/TOC, 18F-DOPA, 68Ga-PSMA, Ga-FAPI.

Brain PET scans in oncology (11C Methionine) or brain disorders (18F-FDG).

Author of papers about prostate cancer imaging and nuclear cardiology.





**Dr. Georgi Dimitrov**

**Dr. Shuang You**

**Breast Cancer Management in Bulgaria: Evaluating Routine Practices, Treatment Strategies, and Gaps in Care**

Objectives: Breast cancer remains the most common malignancy in women worldwide, with significant variations in incidence, management, and outcomes across healthcare systems. Despite access to European treatment standards, Bulgaria continues to experience high overall and breast cancer-specific mortality. This study aims to evaluate current clinical practices in Bulgarian breast cancer patients, identifying gaps in care and opportunities for improvement. Methods: A retrospective real-world data analysis was conducted on 3,318 patients diagnosed with breast cancer between 2015 and 2019 (pre-COVID-19 pandemic). Data on histological subtypes, tumor grade, stage at diagnosis, treatment approaches (surgery, systemic therapy, sequencing), and patient outcomes were collected and analyzed. Treatment patterns were compared with international guidelines to assess adherence and identify discrepancies. Results: Invasive ductal carcinoma (IDC) was the most common histological subtype (63.8%). A significant proportion of patients (50.7%) presented with poorly differentiated (G3) tumors. HR+/HER2- biology predominated (67.0%). Notably, none of the patients were diagnosed through a national screening program. Upfront surgery was frequently performed in stage II and III disease (55% and 57%, respectively). Among de novo metastatic cases, 33% underwent primary tumor resection, with no significant survival benefit observed. Conclusions: Breast cancer management in Bulgaria is hindered by the absence of a national screening program, inconsistent adherence to guideline-recommended treatment strategies, and limited access to molecular diagnostics for targeted therapies. Standardizing diagnostic and treatment protocols, enhancing biomarker-driven decision-making, and addressing reimbursement delays for novel therapeutics are essential to improving patient outcomes

Dr. George Dimitrov is a medical oncologist interested in precision oncology, tumour genome manipulation, and epigenetic modifications. He holds a BSc in Genetics (University of Leeds), MRes in Translational Oncology (Imperial College London), MD (Medical University of Sofia, “Golden Hippocrates”), and a PhD in Medical Oncology.

He has completed specialized training at Harvard Medical School, MD Anderson Madrid, and Università degli Studi della Campania Luigi Vanvitelli. A sub-investigator in multiple clinical trials, he has 50+ publications in leading journals (BMJ, Cancers, IJMS) and has co-authored several oncology textbooks and monographs.

Currently an Assistant Professor at the Medical University of Sofia, he is a member of ESMO, ASCO, GMC, BLS, and the Bulgarian Society for Immuno-Oncology. His awards include “Physician of the Year – You Are Our Future” (2022) and “Young Doctor of the Year” (2024, UMHAT Tsaritsa Yoanna – ISUL).

**Redefining Hope: Sacituzumab Govitecan in Metastatic Triple-Negative Breast Cancer**

Triple-negative breast cancer (TNBC) remains one of the most aggressive and difficult-to-treat subtypes of breast cancer, with limited options after standard chemotherapy fails. Sacituzumab govitecan (SG), an antibody-drug conjugate targeting Trop-2 and delivering the topoisomerase I inhibitor SN-38, has emerged as a promising therapy for metastatic TNBC.

The phase 3 ASCENT trial demonstrated that SG significantly improved clinical outcomes compared to physician’s choice single-agent chemotherapy. Among patients without brain metastases, SG extended median progression-free survival from 1.7 to 5.6 months and overall survival from 6.7 to 12.1 months. Objective response rates were also notably higher with SG (35% vs 5%). These benefits were observed consistently across subgroups.

While hematologic and gastrointestinal toxicities, such as neutropenia and diarrhea, were more frequent with SG, they were generally manageable with standard supportive care.

This study highlights the transformative potential of antibody-drug conjugates in treating hard-to-tackle cancers like TNBC. Sacituzumab govitecan offers renewed hope where therapeutic options were previously limited, marking a new era in precision oncology.

Master’s Degree (In Progress): Tongji Medical College,  
Huazhong University of Science and Technology - Major in Oncology  
Union Hospital, Wuhan, China





**Dr. Maria Mihaylova**

### Hybrid Sentinel Lymph Node Imaging in Breast Cancer

M. Mihaylova<sup>1</sup>, E. Piperkova<sup>1</sup>, L. Chavdarova<sup>1</sup>

<sup>1</sup>University Specialized Hospital for Active Treatment in Oncology, Department of Nuclear Medicine, Sofia, Bulgaria

**Introduction:** In patients with breast cancer (BC), accurate lymph node staging is essential for both prognosis and treatment optimization, in the era of evolving therapeutic approaches. Hybrid sentinel lymph node (SLN) imaging with following SLN biopsy (SLNB) is an established procedure, emerging as gold standard, gradually replacing axillary lymph node dissection (ALND) in the staging of the axilla because of its accuracy and limited invasiveness. Further validation of the approach is needed in the background of neoadjuvant systemic treatment (NAT) to improve patients' outcomes.

**Materials and methods:** We conducted a retrospective study by reviewing the data of 64 patients with early-stage BC - T1-T2, who performed a hybrid SPECT/CT SLN-scintigraphy in the Department of Nuclear Medicine in University Specialized Hospital for Active Treatment in Oncology, Sofia, Bulgaria, with consequent intraoperative detection. The data was recruited between January 2024 and January 2025. Radiolabeled colloid particles (99mTc-Nanocoll) were used to map and localize the "hot" (+) SLN in all the patients. We examined the patients' demographic and tumor characteristics, the sentinel lymph node characteristics and intraoperative SLN identification.

**Results:** Hybrid imaging with consequent SLNB were successfully carried out in 61 out of 64 patients (95.3% detection rate). The procedure was performed in overall 57 (89,1%) patients after core-needle biopsy (21 patients (32.8%) after NAT) and 7 (10.9) patients after initial lumpectomy. One patient had a bilateral breast disease, showing lymph drainage in both axillary lymph nodes. We identified one (+) SLN lymph node in 50 (78.1%) patients, two (+) SLN in 10 (15.6%) and three in 1 patient (1.6%). SLN was identified intraoperatively in 58 out of 64 cases (96.16% success rate). The number of SLN harvested in the operating room was one in 4 cases (6.3%), 2 in 29 cases (45.3%), 3 in 16 cases (25.0%), 4 in 5 cases (7.8%), and 5 in 4 cases (6.3%). There were 10 positive SLN's (6 macro metastases and 4 micro metastases). In 3 patients over 65 years, SLN could not be detected by SPECT/CT or surgery. Additionally, intraoperative detection failed in another 3 pts of the same age group. This led to ALND (>6LN) in overall 6 pts (9.4).

**Conclusion:** We found excellent detection rate of SPECT/CT in all groups – early-stage breast cancer (T1-T2), after previous lumpectomy and NAT with similar success rate intraoperatively during SLNB. SLN-detection failure was seen mainly in pts >65y. Concerning SLNB, clinicians should take care of precise patient selection to minimize cases where SLN cannot be identified.

Hybrid SLN imaging with consequent SLNB is a well-established and standardized practice in our institution, implemented through a multidisciplinary approach. Its proved efficacy and clinical benefits highlight the necessity of its broader adoption across all medical centers in Bulgaria to enhance diagnostic accuracy and improve patients' outcomes.

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Dr. Maria Mihaylova has graduated Pleven Medical University in 2020 with excellent academic performance. From 2018 to 2020, she was part of the Organizing Committee of the International Medical Conference for Students and Young Doctors at Pleven Medical University. She is currently working as a resident physician at the Department of Nuclear Medicine at University Specialized Hospital for Active Treatment in Oncology, "Prof. Ivan Chernozemski", Sofia. Her clinical and scientific interests include the role of PET/CT in the diagnostic algorithm of breast, lung, prostate and head and neck cancer, as well as melanoma. Along her clinical work she attended preceptorship courses in Austria and Spain, annual congresses of the European Association of Nuclear Medicine and was part of the last years Young Investigators Meeting (YIM) in Vienna. She is an active member of EANM, ESMO, EMSIT, BAR and the Young Oncologist Club.



**Dr. Zahari Zahariev**

### New Technologies in Radiotherapy – Ride in the Future

Keywords:

innovation in radiotherapy, Flash therapy, proton therapy, metastatic tumors

Thanks to the drugs development cancer become more and more chronic disease. This is a major change, whose effect is leading to longer life expectancy and need of better systematic treatment for metastatic tumors. Therefore in the past 30 years radiotherapy undergo both technical and conceptual changes. There are several ideas that were developed: to irradiate smaller volumes with minimal impact on the surrounding healthy tissue and dose escalation. Following this concepts future aspects of radiotherapy are to minimize human error (automatization) and to provide the opportunity of even more complicated but optimal for tumor control treatment delivery with higher dose and for short treatment time (FLASH therapy).

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Dr Zahari Zahariev is the Head of the Radiation Therapy Department at Uni Hospital Oncology Center since 2016. Previously he has worked as Head of the Radiation Therapy and Nuclear Medicine departments at UMHAT Tsaritsa Yoanna – ISUL, Sofia. He has contributed to the development of radiation therapy in Bulgaria as an expert with the Ministry of Health and a consultant for national oncology committees. He is also the Editor-in-Chief of the National Radiation Therapy Standards for Head and Neck Tumors.

Dr Zahariev has a Master's Degree in Medicine (1996) from the Medical University of Sofia, followed by specializations in Radiation Therapy (2001) and Medical Oncology (2004). In 2017, he obtained a Master's Degree in Health Management. He is Chairman of the Bulgarian Radiosurgery Association since 2018 and Chief Coordinator of the Radiation Therapy Expert Council since 2023.

His research focuses on head and neck tumors, breast cancer, rectal and prostate carcinomas, particularly in non-conventional fractionation, chemo-radiotherapy, and organ-preserving approaches. He has delivered over 60 publications and lectures at national and international congresses.

He is a member of ESTRO, ESMO, BAMO, and the Radiation Therapists Guild in Bulgaria.





**Prof. Tatiana Hadjieva**

## **Flash Radiotherapy - Gateway to Promised Land or Another Mirage / How Close Are We to Real Practice ?/**

### **Guild of Bulgarian Radiotherapist**

Radiotherapy plays a pivotal role in the control and eradication of tumors, but it can also induce radiation injury to surrounding normal tissues while targeting tumor cells. In recent years, FLASH-Radiotherapy (FLASH-RT) has emerged as a cutting-edge research focus in the field of radiation therapy. By delivering high radiation doses to the treatment target in an ultra-short time, FLASH-RT produces the FLASH effect, which reduces the toxicity to normal tissues while achieving comparable tumor control efficacy even to the most highest-tech radiotherapy. The author provides a brief overview of the development history of FLASH-RT and its impact on tumor control. Different radiobiological mechanisms are thoroughly described acting separately to the tumour and to the normal tissues. It focuses on introducing the protective effects and molecular mechanisms of this technology on various normal tissues. The possible synergistic effects of FLASH-RT if combined with other oncotherapies are also explored. A significant number of preclinical studies have proven the effectiveness of FLASH-RT, which is expected to open a new milestone for cancer radiotherapy by enhancing antitumor efficacy and minimizing normal tissue toxicity. Researchers and doctors are facing many challenges in translating FLASH-RT into clinical practice. Promising future applications are outlined.

Prof. Hadjieva has graduated Medicine in Higher Medical University, Sofia, Bulgaria with an award for primacy. She received a Postgraduate Speciality in Radiation Oncology and Nuclear Medicine in 1979 and in Oncology - 2000. In 1988 she defended a PhD thesis in Thyroid Carcinoma Treatment, and in 2004 became a Doctor of Medical Sciences, D sc. In 1995 she was habilitated as Associate Professor and in 2005 as Full Professor in the University Radiotherapy Clinic, Medical faculty, Sofia.

Since 1975 she was appointed in UH "Queen Joanna" as junior assistant in Radiotherapy Department and worked there more than 40 years becoming Head of the department and modernizing it to high-tech radiotherapy centre in 2009. Later she moved to organize a new RT Department in the private City Clinic Oncology serving as Head of the department up to August 2017. Now, Prof. Hadjieva is working in UH "St Ivan Rilski in Radiotherapy and Radiosurgery Clinic, Sofia.

Prof. Hadjieva was appreciated as an invited lecturer in Germany, Belgium, Israel, Turkey, Ukraine, Poland etc.

She is the author of more than 120 publications in journals (in English and in Bulgarian), participated as co-author in 40 monographs, guidelines, handbooks and gave over 100 talks on International Congresses and National Meetings.

Prof. Hadjieva has served for many years as an expert in following organisations and committees: National Head and Neck Cancer Treatment Committee 1981-2015; Endocrine Disease Treatment Group 1987-2015; Member of National Committee for Evaluation of Consequences after Chernobyl Accident 1990-1995; Council for Medical Science, Medical University, Sofia, 1998 - 2004 ; National Council for Radiation Protection, Committee of Peaceful Use of Atomic Energy, 2002-2015; Scientific Committee for Roentgenology, Nuclear Medicine, Radiotherapy and Radiobiology at the Council of Ministries from 2005 till the end ; National Representative for Radiation Oncology, Ministry of Healthcare, from 2000-2006 and 2015; National Health Insurance Fund, Responsible for Radiotherapy, since 2001

As member of international societies such as European Society of Nuclear Medicine, ESTRO, ASTRO, BUON, ESMO, etc., she promotes Bulgarian radiotherapy care abroad.



**Dr. Ahmed Kontilev**

Dr. Ahmed Kontilev is a specialist in "Medical Oncology" at Achibadem City Clinic General University Hospital for Active Treatment Tokuda since 2018. He graduated from the Medical University of Sofia in 2009.

From July 2010 to July 2011 worked as a resident doctor in the Clinical Laboratory of the General Hospital for Active Treatment "R. Angelova", town of Pernik. From January 2012 to January 2013, he worked as a resident physician at the National Reference Laboratory of Immunology at the National Institute of Immunology. From May 2012 to July 2014, he specialized in Internal Medicine at the Medical Academy in Sofia. He has been part of the team of Tokuda Hospital Sofia since January 2013, where he successively worked as a doctor in the Hematology and Oncology Clinic, and since July 2014 he has specialized in Medical Oncology at the Hematology and Oncology Clinic. Acquired Medical Oncology specialty in 2018.

His professional interests are in the field of onco-dermatology -drug treatment of malignant melanoma and non-melanoma skin tumors, as well as in the field of immuno-oncology.



**Dr. Teodora Karanikolova**

Dr. Teodora Karanikolova is a graduate of the Medical University of Sofia and the National Oncology Hospital with a degree in "Medical Oncology". At the beginning of her career she won the "Teodora Zahariava" scholarship and has been a member of the Laureates Club ever since. Expanding her expertise in the field, Dr. Karanikolova has aBADO, BOND she often participates as a lecturer in national and international oncology forums. She is currently a medical oncologist at St. Ekaterina Hospital Sofia. Her greatest passion and focus lies with immuno-oncology, melanoma and breast cancer and she contributes with scientific publications on the topic.





**Prof. Sonya Sergieva**

## 68Ga-FAPI PET Imaging in Oncology

FAPI-based radiopharmaceuticals are promising radiotracers for cancer diagnosis, staging and restaging. They may be better alternatives for cancer types that exhibit low to moderate uptake of 18F-FDG, including gastric, pancreatic and liver cancers. As a tumortropic radiopharmaceutical, FAPI was first describe Fibroblast activating protein (FAB) is a serine protease, a transmembrane glycoprotein characterised by its high expression in tumor-associated fibroblasts. Functional FAP has an influence on normal embryonic development and tissue modelling. FAP remains in very low concentrations or is completely absent in adult tissues. It is significantly increased in repairing tissue processes, atherosclerotic plaque formation and fibrosis, in inflammatory disease e.g. arthritis and Crohn's disease, in areas of extracellular remodelling of the matrix in myocardial infarction and liver cirrhosis, expressed in over 90% of human epithelial carcinomas. These biological properties and functional activity were first described by P.Garin-Chesa et al in 1990. As a radiopharmaceutical tracer 68Ga FAPI was published by Loktev et al in 2018. After their article numerous studies were reported for the diagnostic accuracy of FAPI PET imaging of various cancers, taking into account high accuracy and favorable tumor: background ratio. In this study the clinical application of 68Ga FAPI in oncology was presented.

Prof. Dr. Sonya Borisova Sergieva, MD, PhD graduated from medicine in Medical Academy, Sofia in 1991.

During the period 1991-1994, she was a PhD student of nuclear medicine in the National Oncological Center, Sofia and has defended dissertation for the acquisition of a degree "doctor of medicine" in 1995 on the theme: "Nuclear medicine aspects in the diagnosis of malignant melanoma by means of radioimmunoscintigraphic methods".

Prof. Sergieva has acquired specialty of "Nuclear Medicine" in 1994 and specialty of "Oncology" in 1998. She worked as a senior scientific researcher in the the National Oncological Center till 2002.

Prof. Sergieva has created and managed as a head the nuclear medicine department in Sofia Cancer Center, Sofia during the period February 2003 - May 2024.

Since March 2012 year she is an associate professor of nuclear medicine, and since November 2015 – professor of Nuclear Medicine in Medical Academy, Sofia.

Her current position is Head of the Department of Nuclear Medicine in Acibadem CityClinic “Tokuda Hospital” since May 2024.

Prof. Sergieva has conducted a large number of specializations and training educational courses abroad (over 30) along the lines of the European School of Oncology-ESO, the European Association of nuclear medicine-EANM, the International Atomic Energy Agency-IAEA and others.

She is a member of the Bulgarian society of nuclear medicine, the Bulgarian society of Oncology, the European Association of nuclear medicine-EANM, American Society of nuclear medicine-SNMMI, of the International Association of women in nuclear energy (WIN), the World Association of radionukledna therapy (WARMTH).

Professor Sergieva has over 180 scientific publications in Bulgarian and foreign scientific periodicals, she has participated as a guest speaker at national and international scientific congresses.

Her main professional interests are in the field of nuclear oncology and radionuclide therapy of cancer.



**Dr. Paolo Castellucci**

## Theranostic Approach in Prostate Cancer

The talk will highlights the role of PSMA-targeted diagnostics (PET PSMA) and therapy (PSMA Radio Ligand Therapy RLT) in prostate cancer management. Particular interest will be put on 177Lu-PSMA-617, in metastatic castration-resistant prostate cancer patients post-chemotherapy and ARPI treatment. A comparison in efficacy and safety with other therapies in mCRPC will be treated like Cabazitaxel and Enzalutamide or Abiraterone. The talk will focus on main RLT indications, patient selection, treatment planning, and treatment execution. Other “next future” application will be treated like the use of Lu-PSMA in pre chemotherapy setting or the possibility to re-treat patients in progression after Lu PSMA with alfa emitters like Actinium (225Ac) will be reported.

Key topics will include: Main RLT indications in prostate cancer Patient; selection criteria for PSMA-targeted therapies; Treatment planning and execution strategies for PSMA RLT; potential use of Lu-PSMA in the pre-chemotherapy setting.

### Academic titles

School of Medicine at the Università degli Studi di Bologna, graduation in Medicine and Surgery

School of Medicine at the Università degli Studi di Bologna, Residency in Nuclear Medicine

School of Medicine at the Università Modena e Reggio: Residency in Medical Radiology

### Work experience

December 2002 - present: Dirigente Medico di I livello (registrar) at the Servizio di Medicina Nucleare e Centro PET della Azienda Univeristario Ospedaliera S.Orsola – Malpighi di Bologna. From 2005 Professor at the “Scuola di specializzaione in medicina nucleare”, at the University of Bologna.

March 2001 - December 2002: Dirigente Medico di I livello (registrar) at the Servizio di Medicina Nucleare dell’Ospedale S. Croce e Carle di Cuneo; clinical applications of PET in oncology and cardiology.

November - December 2001: Visiting fellow at the CETIR PET center Barcelona, Spain clinical application of PET in oncology and cardiology (Director Prof. Ignasi Carrió).

January - December 2000: Research fellow at the “Istituto Europeo di Oncologia” (I.E.O.) experience on Radio Target Therapy with 90Y and somatostatin analog (DOTA-TOC) and radioguided surgery (ROLL; SNB) (Director, Dr. Giovanni Paganelli).

June - December 1998: fellow at the Department of Radiology, Service of Nuclear Medicine and PET Center, Hospital of the University of Pennsylvania, Philadelphia (Director, Prof. Abass Alavi).

Skills: Large experience in whole-body PET/CT scan reading using 18F-FDG, 11C-Choline, 11C-Methionine, 11C-Acetate, 68Ga-DOTA-NOC, 18F-DOPA, 11C-Ephedrine, 64Cu-ATSM. The PET centre at the Azienda Ospedaliera S.Orsola–Malpighi, Bologna is provided with 3 PET/CT scanners and the output is about 7000-8000 scans per year.

Brain PET scans in oncology (11C Methionine) or brain disorders (18F-FDG). Large experience in organizing a PET centre. Experience in Radio Target Therapy with somatostatin analog (90Y-dota-TOC). Experience radio guided surgery (sentinel node detection in breast, melanoma, genito-urinary tract and ROLL).

Italian referent for H10 EORTC protocol on the application of PET in Hodgkin Lymphoma.

Member of the EANM group about the application of Choline PET in prostate cancer.



### Languages

English: good knowledge of written and spoken language; Portuguese (Brazilian): excellent knowledge of the spoken language; Spanish: fair knowledge of the spoken language.

Publication: Authors and Co-Authors of more than 100 full papers publications in the field of Oncological applications of PET.



**Prof. Francesco Giammarile**

### Non-FDG PET/CT in Diagnostic Oncology

While fluorodeoxyglucose (FDG) Positron Emission Tomography and Computed Tomography (PET/CT) remains the cornerstone of molecular imaging in oncology, non-FDG PET/CT radiotracers have significantly expanded the diagnostic capabilities of this technology. These tracers, targeting specific biological pathways, offer improved sensitivity and specificity for various cancers, particularly where FDG has limitations.

In prostate cancer, Prostate-Specific Membrane Antigen (PSMA) is a transmembrane protein that is overexpressed on the surface of prostate cancer cells, particularly in advanced and metastatic cases. Its high expression and limited presence in normal tissues make it an excellent target for imaging in prostate cancer. PSMA-targeted agents such as Ga-68 or F-18 PSMA have become indispensable for detecting recurrent disease and metastases, especially at low PSA levels, where FDG is often insufficient.

For neuroendocrine tumors (NETs), somatostatin receptor imaging with Ga-68 DOTATATE, DOTANOC, or DOTATOC ensures precise localization of tumors and facilitates treatment planning for peptide receptor radionuclide therapy (PRRT).

Breast cancer imaging benefits from F-18 Fluoroestradiol (FES), which assesses estrogen receptor expression to guide hormonal therapy decisions. This is especially valuable in metastatic or recurrent cases.

In hepatocellular carcinoma (HCC), tracers like C-11 Acetate and F-18 Choline outperform FDG due to their ability to capture metabolic variations specific to HCC. For brain tumors, amino acid tracers such as C-11 Methionine and F-18 Fluorodopa (FDOPA) help differentiate between tumor recurrence and treatment-related effects, providing better delineation of brain lesions. In lymphomas, while FDG remains the standard, tracers like Fluorothymidine (F-18 FLT) provide additional information on tumor proliferation, which may complement FDG findings.

The primary advantages of non-FDG PET/CT include its higher specificity, as the tracers target unique cancer-related pathways such as receptor expression and amino acid metabolism, and its lower background uptake, which improves lesion visibility in FDG challenging areas like the brain or liver. Moreover, many tracers, such as PSMA and DOTATATE, enable theranostic applications, combining diagnostic imaging with targeted radionuclide therapy.

However, challenges persist. Non-FDG tracers are often costly and less accessible, requiring advanced infrastructure for production and regulatory approval. The implementation of these tracers in clinical practice also demands specialized expertise and logistical support.

Despite these challenges, the future of non-FDG PET/CT is promising. Ongoing research continues to explore novel tracers targeting cancer-specific pathways, refine imaging protocols, and enhance theranostic applications. As precision oncology advances, non-FDG PET/CT will play an increasingly critical role in delivering personalized diagnostic and therapeutic solutions for a wide range of malignancies.

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Prof. Francesco Giammarile is a physician licensed in Italy and in France, with a post-graduate degree in nuclear medicine, a PhD in biophysics and MSc in oncology, pedagogy, hyperbaric medicine and nuclear physics.

His main field of interest is nuclear oncology, including diagnosis with special emphasis in hybrid imaging such SPECT/CT and PET/CT, sentinel lymph node and surgical guided procedures, and radionuclide therapy.

More specifically, he has developed a research program evaluating the clinical impact of PET imaging in therapy response and outcome prediction in lymphoma and lung cancer patients. He coordinated several national and international clinical projects and is involved in several research programs funded by the French Government, in the field of general oncology, lymphoma, lung cancer, breast cancer, colorectal cancer, osteosarcoma, neuroblastoma, neuroendocrine tumors.

From 2006 to 2017, he was a professor in the nuclear medicine department of the university hospital in Lyon, a senior lecturer in the medical school and an associate researcher in the university lab.

Since 2017, he is the Congress Chair of the European Association of Nuclear Medicine.

At present, he works as Senior Technical Officer for the International Atomic Energy Agency for the development of Nuclear Medicine in low- to middle-income countries.

He has over 170 co-authored indexed publications in peer reviewed journals, in addition to about 100 publications in national journals, 120 publications in conference proceedings and several books and CD-ROM in biophysics, for medical students, and nuclear oncology, for physicians. On Google Scholar, he has about 4800 quotations, and a H-index of 36.





**Dr. Yun Bai**

### **Advances in Immunotherapy for Prostate Cancer**

In recent years, remarkable progress has been made in the field of prostate cancer immunotherapy, especially in the treatment of metastatic castration-resistant prostate cancer (mCRPC) and metastatic hormone-sensitive prostate cancer (mHSPC). Immune checkpoint inhibitors (ICIs) have limited efficacy as monotherapy, but show synergistic effects when combined with androgen receptor pathway inhibitors (ARpis), chemotherapy or targeted drugs. For example, the combination of PD-1/PD-L1 inhibitors and ARPI can significantly improve patient survival, and high objective response rates have been observed in some studies. In addition, the combination strategy of PARP inhibitors and immunotherapy has shown potential to significantly improve survival outcomes in patients with homologous recombination repair deficiency (HRD). The exploration of new targeted therapy strategies has become a research hotspot. The combination of PSMA-targeted radioligand therapy (RLT) and immunotherapy has shown a synergistic effect in clinical trials, significantly improving progression-free and overall survival. Domestic research teams have further revealed the role of endoplasmic reticulum stress-related pathways (such as IRE1 $\alpha$ -XBP1s) in the regulation of the immune microenvironment of prostate cancer. Targeting this pathway can reduce the infiltration of inhibitory immune cells and enhance the activity of CD8+ T cells, providing a new direction for combined immune checkpoint blockade. Despite significant progress, immunotherapy still faces challenges, including patient response heterogeneity, immune-related adverse events, and the need for optimization of combination regimens. Future research needs to further explore new targets, optimize the biomarker system, and promote the application of precision treatment strategies through multidisciplinary collaboration.

Attending Physician, Department of Medical Oncology,  
The Second Affiliated Hospital of Harbin Medical University,  
PhD in Oncology, Postdoctoral Fellow in Pharmacology

### **Cancer in Adolescent and Young adults (AYA) – Current Landscape, Challenges and Unmet Needs. A Clinical Perspective.**

Authors: Dr. Tsvetan Yordanov, Dr. Ivelina Pandzharova, Dr. M. Musin, Dr. Sara Tuncheva, Dr. P. Spasov, Assoc. Prof. Dr. Assia Konsoulova

Patients, diagnosed with cancer in the age group 18-35 years, represent a hard to diagnose, treat and follow-up group. Their management is a challenge to clinicians even in dedicated to AYA with cancer centers. There are different types of diseases diagnosed in this age group with unfortunately a high rate of unrecognized and unmet needs.

We shall present an analysis of this subgroup of patients, treated at our clinic from 2023 onwards, aiming to raise awareness amongst oncologists in Bulgaria and to improve care in the treatment of our youngest patients.



**Dr. Tsvetan Yordanov**

Dr. Tsvetan Yordanov

Resident in Medical Oncology

#### **Education:**

Master's Degree in Medicine, Medical University – Sofia

#### **Professional Experience:**

Residency in Medical Oncology since 2022

Active participant in clinical trials as a sub-investigator and academic projects at the clinic

#### **International Training and Awards:**

Scholarship holder of the Bulgarian Medical Association (2019)

#### **Memberships:**

ESMO, ESO, ESCO, AAF, Young Oncologist Club, Bulgaria



**Assoc. Prof. Assia Konsoulova**

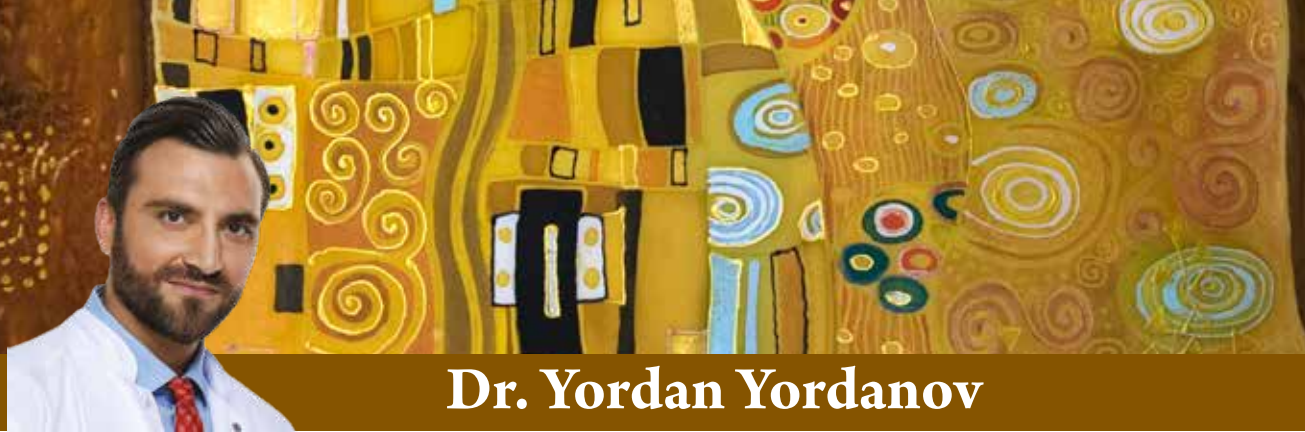
Assoc. Prof. Assia Konsoulova graduated from the Medical University – Varna. She is board certified in Internal Medicine and Medical Oncology. She defended a PhD thesis in 2016. She is currently the Head of the Medical Oncology clinic at the University Hospital for Specialized Oncology Treatment in Sofia.

Her professional career started at the University Hospital Sveta Marina, Varna in Bulgaria and she subsequently worked and specialized at International reference centers as Jules Bordet Institute, Brussels, Belgium, AKH– Vienna, Austria and Clinical Cancer Center Champalimaud, Lisbon Portugal. She has been awarded several grants, incl. ESMO, ESO, ECCO, CECOG and EU fellowships. She is also a recipient of the 2016 MORE-Darzas award for significant input in the Bulgarian clinical oncology.

She is a member of ESMO, ASCO, ECCO, ESO, Flims Alumni Club, as well as a member of the ethics committee in the Young Oncologist Club Bulgaria. She is a national coordinator for Bulgaria for two large initiatives: European Initiative in Quality Management in Lung Cancer Care and ENTYAC (European network for teenagers and young adults with cancer).

Assoc. Prof. Konsoulova is an author of more than 90 publications and scientific reports, most of them in peer-reviewed journals. She is an editor at the congresses of ERS and Breath journal. Dr. Konsoulova is also a member of the scientific committee of the National MORE conference for management of Breast (2018) and prostate cancer (2019).





**Dr. Yordan Yordanov**

## **Neoplastic Complications Related to Breast Implants: Insight into Diagnosis and Treatment of Breast Implant-Associated Anaplastic Large Cell Lymphoma (BIA-ALCL) and Breast Implant-Associated Squamous Cell Carcinoma (BIA-SCC)**

Yordan P. Yordanov, MD, PhD, FEBOPRAS

ASD Consult – Sofia, Bulgaria

### **Abstract**

Breast implants have been widely used for more than 60 years for both reconstruction purposes following mastectomy and aesthetic breast augmentation or remodeling. Despite initial concerns, several studies have shown that breast implants do not increase the risk of breast tissue cancer. However, during the past few decades the risk of breast implant capsule-associated tumors has become more evident than ever. Current evidence suggests that breast implants of different types and textures may favor alterations on surrounding tissues and cells recruited at the implant capsule, which, in the long-term and under given stimuli, might cause tumorigenesis.

The two major and distinct neoplastic complications related to breast implants are Breast Implant-Associated Anaplastic Large Cell Lymphoma (BIA-ALCL) and Breast Implant-Associated Squamous Cell Carcinoma (BIA-SCC). None of the above mentioned malignancies is a cancer of the breast tissue itself. The clinical presentation of both BIA-ALCL and BIA-SCC is often subtle, with signs and symptoms that can be misinterpreted, causing diagnostic delays if in-depth investigation is not prompted. Furthermore, both of them may exhibit highly invasive properties, including spread to lymph nodes, local tissues and distant sites. Even not randomly seen in daily practice, it is crucial that healthcare providers and patients to be aware of these serious conditions. Continuous monitoring and sharing of information about these diseases are crucial for advancing our knowledge and improving its detection and management.

The aim of the presentation is to provide up-to-date information on the diagnosis and treatment of the BIA-ALCL and BIA-SCC.

Keywords: breast implants, BIA-ALCL, BIA-SCC, patient safety

Dr. Yordanov P. Yordanov is a Board-Certified plastic surgeon currently practicing in Sofia, Bulgaria with special focus on facial and breast aesthetic and reconstructive surgery.

Dr. Yordanov has a PhD degree cum laude in plastic surgery with European Mention by the Complutense University-Madrid, Spain. He is a fellow of the European board of Plastic Reconstructive and Aesthetic Surgery (EBOPRAS) and a member of the Spanish Society of Plastic Reconstructive and Aesthetic Surgery (SECPRE), the American Society for Aesthetic Plastic Surgery (ASAPS) and the American Society of Plastic Surgeons (ASPS).

Dr. Yordanov has been trained in Spain, Belgium and USA as a recipient of the ASPS/PSF International Scholarship (program completed in Massachusetts General Hospital, Harvard Medical School) and through the ASAPS International Fellowship program.

Dr. Yordanov is an author of numerous scientific publications in national and international renowned journals, two monographs and a co-author in Plastic Surgery manual book for students in Spanish. He is a trainer and lecturer in national and international meetings, congresses and educational events.



**Assoc. Prof. Valeria Hadzhiyska**

## **PET/MRI Based Radiomics and Artificial Intelligence in Prostate Cancer Diagnosis**

V. Hadzhiyska

Clinic of Nuclear Medicine, Medical University of Sofia

Molecular imaging is a key tool in the diagnosis and treatment of prostate cancer (PCa). Magnetic Resonance (MR) plays a major role in this respect with nuclear medicine imaging, particularly, Prostate-Specific Membrane Antigen-based, (PSMA-based) positron emission tomography with computed tomography (PET/CT) also playing a major role of rapidly increasing importance. Another key technology finding growing application across medicine and specifically in molecular imaging is the use of machine learning (ML) and artificial intelligence (AI). It might help the clinicians to improve the overall efficiency and accuracy of using the row data sets from technical aspects (such as semi-automatization of tumor segmentation, image reconstruction, and interpretation) to clinical outcomes, improving a deeper understanding of the molecular environment of PCa, refining personalized treatment strategies, and increasing the ability to predict the outcome. This presentation will focus on two goals: first to give the reader an introduction to the AI technologies available, and secondly, to provide an overview of AI applied to PET/CT i for diagnosis, staging, target volume definition for treatment planning, outcome prediction and outcome monitoring in PCa.

Assoc. Prof. Hadzhiyska obtained a specialty in nuclear medicine in 2013 and in the same year successfully defended her dissertation on the topic "Application of nuclear medicine methods for the diagnosis of urolithiasis and its complications". In 2016, Dr. Hadzhiyska was awarded the academic title of "associate professor". Currently, she is the main author and co-author of over 130 scientific papers. Currently, her main activities and responsibilities include: Head of the Nuclear Medicine Clinic at UMHAT Alexandrovska, Head of the Department of Nuclear Medicine, Radiotherapy and Medical Oncology of MU at MU-Sofia (scientific obligation), Chief EU Coordinator for NM at the Ministry of Health of Bulgaria, National Delegate of EANM, National Coordinator of IAEA. Under her leadership, in 2016, a cyclotron complex for its own production of radiopharmaceuticals for positron emission tomography was put into operation at UMHAT Alexandrovska. Under the leadership of Assoc. Prof. Hadzhiyska, in May 2016, a new methodology for the therapy of patients with bone metastases from prostate cancer was developed in Bulgaria, applying a new metabolic brachytherapy - definitive radionuclide therapy of bone disease with (223) Ra - dichloride in patients with refractory prostate cancer. Under her leadership, one of the fastest developing modern nuclear medicine techniques worldwide for the diagnosis and monitoring of patients with prostate cancer was introduced, namely positron emission tomography with 68Ga-labeled radiopharmaceuticals, respectively 68Ga PSMA for prostate cancer and 68 Ga DOTATOC for neuroendocrine tumors. He is currently the leader of two international projects under the IAEA - Introducing 68-Ga in Patients with NeuroEndocrine Tumours and Prostate Cancer in Clinical Practice (BUL 6013) and Enhancing the capacity of cyclotron and small scale based radiopharmaceutical production in Bulgaria, IAEA (BUL6015).





**Dr. Albena Fakirova**

## Prostate Cancer – What Does the Pathology Report Show us?

Prostate cancer (PCa) is the second most commonly diagnosed cancer in men, with an estimated 1.4 million diagnoses and 375,000 deaths worldwide in 2020.

In Europe, it is the most frequently diagnosed cancer in men and the third cancer-related cause of death in men.

A Systemic Review of autopsy studies reported a prevalence of PCa at age < 30 years of 5% (95% confidence interval [CI]: 3–8%), increasing by an odds ratio (OR) of 1.7 (1.6–1.8) per decade, to a prevalence of 59% (48–71%) by age > 79 years

There is variation in the frequency of autopsy-detected PCa between men with different ethnical backgrounds and geographical areas (e.g., 83% in white US males vs. 41% in Japan at age 71–80).

A cornerstone of the nowadays pathologists' reports on prostate cancer is the Gleason grading - a truly multidisciplinary project. The grading system, applied for the prostate cancer, is unique. It is created by a pathologist Donald Gleason between 1966-1974.

Major reasons for the popularity of the Gleason system included its simplicity, with histological patterns identified at low-medium power magnification, and the ease of use of the iconic visual illustration of the Gleason grading system that was originally sketched out by Dr. Gleason himself.

The major innovation adopted at the 2014 ISUP consensus conference was a new grading system for prostate cancer. In this new system, Gleason scores were assigned to grade groups, from 1 to 5, to better reflect the prognostic implications.

Since then some new updates of this grading system were made, every one of them supporting more precise risk stratification of the patients.

The short overview will be presented during the lecture, helping the medical oncologists and urologists to understand the pathology reports.

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Dr. Albena Fakirova has graduated Medicine from the Medical University of Sofia in 1994. During her years of study, she had a strong interest in pathology, which she later on pursued in her professional career as a doctor. Between the years of 1998 and 2008 Dr. Fakirova worked as a resident pathologist at the Pathology department of Pirogov Emergency Institute. In 2007 she received her postgraduate specialty in “General and Clinical Pathology”. She began work at the department of pathology in the Military Medical Academy (MMA) of Sofia the following year, where she has been working ever since. 5 years ago, she also took the role of Head of the department there. Aside from that, Dr. Fakirova has also been an invaluable member of the pathology team at Uni Hospital Panagyurishte for almost 7 years now.

When it comes to her activities outside of work, it is worth noting that Dr. Fakirova is a member of both the Bulgarian Society of Pathology and the European Society of Pathology. In addition, she has taken active participation in various postgraduate courses throughout the years covering different topics in countries such as Italy, Germany, Austria, Belgium, Denmark, Sweden, Romania and Greece. Her academic interests lie in Uro-pathology, as well as Gastrointestinal, Breast and Lung Pathology.



**Dr. Nikola Toromanov**

## Leadership in Oncology

Leadership in oncology is crucial for advancing cancer care, fostering innovation, and improving patient outcomes. Effective leaders in this field must combine medical expertise with strong management skills to navigate the complexities of cancer treatment, research, and healthcare policy.

Oncology leaders play a pivotal role in multidisciplinary teams, ensuring collaboration among surgeons, medical oncologists, radiologists, and nurses to deliver patient-centered care. They must also advocate for evidence-based practices while staying updated on breakthroughs in immunotherapy, precision medicine, and emerging technologies.

Beyond clinical expertise, strong leadership involves mentorship, inspiring the next generation of oncologists, and promoting a culture of continuous learning. Leaders must also address challenges such as healthcare disparities, access to treatment, and the emotional burden on patients and caregivers.

In research and academia, oncology leaders drive clinical trials, secure funding, and translate scientific discoveries into real-world applications. Institutions rely on visionary leaders to shape cancer programs, optimize resource allocation, and implement quality improvement initiatives.

Additionally, leadership in oncology extends to policy-making, where advocates influence legislation on cancer funding, drug approvals, and preventive care. Effective communication and ethical decision-making are essential in balancing patient needs with healthcare system constraints.

Ultimately, leadership in oncology requires adaptability, empathy, and resilience. Whether in hospitals, research centers, or advocacy organizations, strong leaders are instrumental in reducing the global cancer burden and improving survival rates. By fostering innovation and compassion, they pave the way for a future where cancer is more preventable, treatable, and manageable.

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Dr. Nikola Toromanov was born on September 1, 1971 in the town of Plovdiv. He graduated Medicine at the Medical University in Plovdiv in 1996. Dr. Toromanov has a huge experience in the pharmaceutical and medical device industry field having worked for companies like Abbott, Novartis, Schering, Bayer, Agfa, Roche, and Astellas. Dr. Nikola Toromanov has also served as a private hospital manager and a chief operating officer of a chain of private medical centres. Currently, he works as a commercial manager of a Bulgarian pharmaceutical and medical device distributor company.

After getting an MBA degree in 2013, he started his teaching career at the Cardiff Metropolitan University affiliate programme in Bulgaria.

Dr. Nikola Toromanov has attended numerous conferences and congresses both in Bulgaria and abroad in the fields of oncology, haematology, imaging diagnostics, gastroenterology, urology, and rheumatology. He is a member of Bulgarian Doctors' Union and speaks two foreign languages – English and Russian.



A horizontal strip of a colorful, abstract painting. It features swirling patterns, geometric shapes, and a palette of yellow, orange, black, and blue. The style is reminiscent of mid-20th-century abstract art, possibly influenced by Kandinsky or Pollock.

*Poster Session*





## The Role of <sup>18</sup>F-FDG PET/CT in Staging and Monitoring Therapy Response in Kaposi's Sarcoma: a Report on Two Clinical Cases

Tanya Nachova<sup>1</sup>, Sonya Sergieva<sup>1</sup>

<sup>1</sup>Nuclear Medicine Department, Acibadem City Clinic Tokuda Hospital, Sofia, Bulgaria

### Background

Kaposi's sarcoma (KS) is a type of angioproliferative malignancy. The main manifestation of the disease are lesions on the skin with violet, red or brown color. Other parts of the body may also be affected, such as mucous membranes, lymph nodes, lungs and digestive system. The etiology is related to human herpesvirus 8 (HHV-8). Four forms of the disease are known: Classic, AIDS-Associated, Endemic and Transplant-Related KS. This abstract discusses the role of <sup>18</sup>F-FDG PET/CT in the follow-up of two clinical cases, an HIV-positive and an HIV-negative patient with KS.

### Case presentation

Case 1: A 52-year-old HIV-positive man with cutaneous-mucosal KS. On initial <sup>18</sup>F-FDG PET/CT scan (December 2021) with evidence of multiple skin, mucosal and lung lesions, generalized metabolically active lymphadenopathy, as well as suspected anorectal involvement. The patient started antiretroviral therapy and performed 6 cycles of chemotherapy (paclitaxel). A post-therapy PET/CT (May 2022) was demonstrated a complete metabolic and morphologic response according to PERCIST.

Case 2: A 74-year-old HIV-negative woman with lesions involving the skin of the right lower leg. A biopsy revealed KS. PET/CT was performed (July 2020) with involvement from the primary tumor of the entire right lower leg with moderately increased metabolic activity. A secondary right axillary lymph node was visualized. The patient performed 6 cycles of chemotherapy (paclitaxel). A post-therapy PET/CT was performed (February 2021) with evidence of complete metabolic response.

### Discussion

<sup>18</sup>F-FDG PET/CT provides useful information in staging and monitoring the effect of therapy in patients with Kaposi's sarcoma. In the cases we have presented, the initial studies visualize increased metabolic activity in the affected body areas and the restaging studies present CMR of the lesions. The high sensitivity of the method for detecting cutaneous and visceral lesions makes it significant in determining the extent of involvement, which is particularly important in HIV-positive patients who are at higher risk for an aggressive disease course.

### Conclusion

<sup>18</sup>F-FDG PET/CT has a promising role as an imaging modality in Kaposi's sarcoma because it shows the metabolic activity of lesions, allows imaging of the whole body and tracks the effect of therapy.

### Keywords:

Kaposi Sarcoma, <sup>18</sup>F-FDG PET/CT, Staging, therapy response, HIV

## A Gastric Metastasis from Ovarian Carcinoma Detected by <sup>18</sup>F-FDG PET/CT – a Case Report

Elena Popova<sup>1</sup>, Teodor Sofiyanski<sup>1</sup>, Tanya Nachova<sup>1</sup>, Karolina Verbanova<sup>1</sup>, Sonya Sergieva<sup>1</sup>, Boryana Ilcheva<sup>2</sup>,  
Albena Fakirova<sup>2</sup>

<sup>1</sup> Clinic of Nuclear Medicine, Acibadem City Clinic Tokuda Hospital, Sofia, Bulgaria

<sup>2</sup>Department of Pathology, Military Medical Academy, Sofia, Bulgaria

### Abstract

Ovarian cancer has the highest mortality amongst the gynecological malignancies. The most common metastatic sites are peritoneum, followed by liver, distant lymph nodes, lung, bone, and brain. There are only a few reported cases of distant metastases in the stomach.

Herein, we present a rare case of a 59 y.o woman with poorly differentiated adenocarcinoma of mixed type: serous, endometrioid and clear cells with a single metastasis in the stomach. The post surgery follow-up was performed with <sup>18</sup>F-FDG PET/CT. The patient remained recurrence-free for 3 years. On a routine follow-up PET/CT scan a hypermetabolic lesion in the stomach was detected. A biopsy confirmed a metastasis from high grade serous ovarian adenocarcinoma. A “Reverse Krukenberg” Tumor – a gastric metastasis from ovarian cancer is extremely uncommon with only a few cases reported. The exact mechanism is still unknown. Even though gastric metastasis from ovarian carcinoma is uncommon, we advise clinicians to stay mindful of the potential for gastric metastasis in patients with a history of ovarian cancer.

### Background:

Ovarian cancer is the 8th most common cancer type in women and the deadliest one amongst the gynecological malignancies. Due to its late clinical presentation, it is often diagnosed in a late stage, when the 5-yr survival rate is under 30%. Despite the commonly observed initial good response to Chemotherapy, chemo-resistant tumor cells can remain in metastatic sites and lead to a relapse or progressive disease.

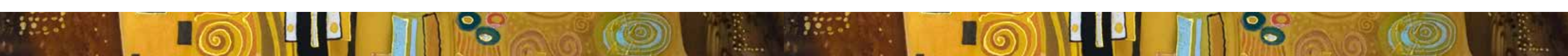
Unlike other cancer types, ovarian cancer metastasizes not only via hematogenous route, but also through the spreading of tumor cells inside the peritoneal cavity. Therefore, the most common metastatic sites are peritoneum, followed by liver, distant lymph nodes, lung, bone, and brain. There are only a few reported cases of distant metastasis in the stomach. Herein, we present a rare case of primary ovarian cancer with a single metastatic stomach lesion.

### Case presentation:

A 59-year-old female with a history of arterial hypertension presented to another hospital with postmenopausal vaginal bleeding. Initial imaging, including abdominal and transvaginal ultrasound, revealed a cystic tumor formation in the pelvis. Given the findings, the patient underwent diagnostic and staging laparoscopic surgery, which included total hysterectomy, bilateral adnexectomy, total omentectomy, appendectomy and paraaortic lymph node dissection. Pathological reports showed poorly differentiated adenocarcinoma of mixed type serous, endometrioid and clear cells.

The patient underwent a diagnostic CT in our hospital 6 weeks after surgery that showed no signs of distant metastases. The patient was staged as pT3N1M0. Pre-therapy CA-125 levels were in the reference range.

Therapy with Paclitaxel, Carboplatin and Bevacizumab was initiated after a cardiac ultrasound showed no abnormalities in the heart function and kinetics.







After 6 cycles of combined Chemo- and Targeted therapy the patient underwent a restaging with 18F-FDG PET/CT. It showed no signs of recurrent or metastatic disease and was assessed as Stable Disease according to RECIST 1.1. A non-avid FDG lesion in the brain was revealed. As indicated by the findings an MRI brain scan was performed and ruled out a metastases from the oncologic disease, the lesion was assessed as meningioma.

Therapy was continued in the same regimen. A restaging 18F-FDG PET/CT scan was performed after 16 cycles and showed a Stable disease.

The patients continued maintenance therapy with Bevacizumab and remained asymptomatic and in a stable clinical condition. CA-125 levels remained normal. The two following routinely performed PET/CT showed stable disease.

PET/CT form January 2024 revealed a FDG avid lesion in the stomach measuring 10×23 mm. The patient reported no symptoms and exhibited overall well-being. Based on the findings, EUS with biopsy was performed. The pathological report showed a metastases of high grade serous ovarian carcinoma.

A clinical Tumor Board stated the necessity of a subtotal gastrectomy. In march 2024 a Billroth I partial gastrectomy was performed. The postoperative period was well-tolerated, and the patient remained stable.

Chemotherapy with Carboplatin and Paclitaxel was reinduced.

A CT form April 2024 showed no abnormalities and the patient continued therapy with Olaparib.

The last PET/CT scan was performed in January 2025 and showed no signs of recurrent disease and no new metabolically active lesions.

**Discussion:**

A Krukenberg tumor is a metastatic “signet ring” subtype of metastatic tumor to the ovary, which typically originates from the stomach in 70% of the cases with incidence of 1% to 21%, with a higher frequency in Asian countries due to the greater prevalence of gastric cancer. A “Reverse Krukenberg” Tumor – a gastric metastasis from ovarian cancer is ever rarer – there are 15 described cases in the medical literature, almost all of them in Asia. Most gastric metastasis are caused by breast cancer, esophagus, malignant melanoma and lung cancer. Gastric metastasis originating from ovarian serous cancer is exceptionally uncommon, representing only 0.013% to 1.6% of all metastatic gastric tumors. Ovarian cancer primarily spreads through direct dissemination. Most common site of spread are the peritoneum, uterus, uterine tubes and lymph nodes. Distant hematogenous spread has been reported in 2% to 3% of patients, mainly to the chest, liver, abdominal wall, abdominal lymph nodes, brain and bones. Even though the exact mechanism of gastric metastasis is not fully understood, it can be accounted for the blood supply of the stomach, making it a potential target for metastasis. Gastric metastasis presents with nonspecific symptoms, which can include epigastric pain, melena, anemia, nausea, and vomiting. In this case, however, the patient was asymptomatic. Although the exact mechanisms of gastric metastasis from ovarian cancer remain unclear, some studies suggest specific pathways that facilitate tumor spread between the stomach and ovaries. Estrogen is likely a key factor, promoting the distant spread of ovarian cancer. Research on tumor development and metastasis in vivo found that MUC4 accelerates the metastasis of ovarian cancer cells by increasing N-cadherin expression, leading to more frequent metastasis to abdominal organs, especially the stomach. Changes in the tumor microenvironment, including estrogen, exosomes, and MUC4, are likely significant factors to the metastatic spread of ovarian cancer.

**Conclusion:**

Although gastric metastasis from ovarian carcinoma is uncommon, we advise clinicians to stay mindful of the potential for gastric metastasis in patients with a history of ovarian cancer.

<sup>18</sup>F- FDG PET/CT proves to be a valuable tool in early detection of uncommon metastatic sites of ovarian cancer.

**Key words:** Ovarian Carcinoma, Gastric Metastasis, <sup>18</sup>F- FDG PET/CT

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## Radiation Colitis: Case Series Examination with Special Reference to the Differential Diagnosis

Rangacheva V, Uzunov D, Ilcheva B, Fakirova A, Hristoskova R, Ivanova S, Sotirova I, Pavlov V, Dikov D  
Department of Pathology, Military Medical Academy, Sofia, Bulgaria

Radiation therapy takes crucial role in the treatment of malignancies in the pelvis by using ionizing radiation to kill rapidly dividing cells, the like of which are cancer cells, and shrinks tumors. Unfortunately, secondary complications often occur. Up to 90% of patients develop some form of bowel disturbance, one of which is our main point of interest- radiation colitis. Radiation colitis is injury to the colon secondary to radiation therapy and clinicians will only increasingly encounter such cases due to improved overall survival in cancers.

The purpose of this project is to look into 13 cases of radiation colitis that have occurred after radiotherapy for neoplastic diseases in the period January 2020- January 2025. An examination of the most common locations of primary malignancies, clinical presentation and contributing factors facilitating this occurrence are made. Furthermore, this nosological unit is explored from a pathologist's point of view, defining its histological findings, comparing acute from chronic forms and last but not least, a consideration of these findings in a differential diagnostic aspect.

## Efficacy of PAXMAN Hair Loss Prevention Therapy in Cancer Patients: A Real-World Data Analysis

Authors: Angel Stefanov, MD, Aynura Changalova, MD, Bozhidar Iliev, MD, Chavdar Harsev, Dimitar Krastev, Fatme Pehlivan, MD, Petya Deenichina, Rossitza Krasteva, MD, PhD, Sava Bakalov, MD, Silvena Bogoeva, MD, Snezhina Nedeva, MD, Tsvetan Tatarov, MD

Cancer treatment can create various challenges, which can impact a patient's overall quality of life. Among these challenges, hair loss is a source of emotional and psychological stress for many patients. The PAXMAN hair loss prevention therapy, a specialized scalp cooling system, aims to minimize or prevent chemotherapy-induced hair loss. Real-world data analysis of patients who have undergone treatment with this system demonstrates promising results, indicating its effectiveness in reducing the incidence and severity of hair loss. This poster provides an overview and analysis of the results.



## Evaluating the Role of Radiotherapy in Brain Metastases Management in Immunotherapy-Treated and Immunotherapy-Naive Patients with Non-Small Cell Lung Cancer: Real-World Clinical Data from a Single Institution

N.Tolev, M.Vartanyan, G.Ganev, M.Kisimova, D.Dimov, V.Yanakieva, B.Iliev, Ts.Tatarov, A.Changalova, S.Nedeva, F.Pehlivan, S.Bakalov, A.Stefanov, R.Krasteva, Z.Zahariev

The standard of care for systemic treatment of metastatic non-small cell lung cancer (NSCLC) has evolved significantly over the years, especially with the advent of targeted therapies and immunotherapy. Treatment selection depends on several factors, including the tumor's molecular profile, PD-L1 expression, and the patient's overall health. Immunotherapy has revolutionized the treatment of NSCLC, particularly for patients with high PD-L1 expression or specific genetic mutations. However, brain metastases remain a challenging aspect of metastatic NSCLC as they are a common complication in patients with advanced lung cancer. The study likely focuses on how radiotherapy such as whole brain radiotherapy (WBRT) or stereotactic radiosurgery (SRS) is used in patients with brain metastases from NSCLC, comparing those who have received immunotherapy to immunotherapy-naïve patients in a single institution. It aims to assess the effectiveness and outcomes of radiotherapy as a treatment modality. The results of this study could provide valuable real-world evidence regarding how radiotherapy impacts the management of brain metastases and whether it should influence treatment strategies, particularly when combined with immunotherapy.



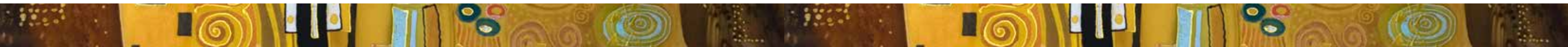
## A Retrospective Study Analyzing Patients with Pancreatic Cancer on Active Treatment

Dr. Antoaneta Marcheva, Dr. Bozhidar Murdzhev,  
Dr. Mirela Dacheva, Nayle Pehlivan  
Department of Medical Oncology  
Multiprofile Hospital for Active Treatment „Saint Sofia”, Boulevard Bulgaria 104, Sofia

Pancreatic cancer remains one of the most challenging malignancies, characterized by late diagnosis and poor prognosis. It is often diagnosed at an advanced stage due to its subtle early symptoms, making treatment challenging. This retrospective study aims to evaluate the clinical outcomes of patients receiving active treatment for pancreatic cancer, focusing on treatment modalities, response rates and survival rates.

We have conducted a retrospective analysis of patients diagnosed with pancreatic cancer who received active treatment at “St. Sofia” Hospital between 1st January 2024 until 31st January 2024 . Data is collected from medical records, including demographic information, treatment regimens (surgery, chemotherapy, radiation), response to treatment and overall survival rate. Factors such as treatment regimen, tumor stage, performance status and individual characteristics of patients significantly influenced patient outcomes.

This study highlights the complexities of managing pancreatic cancer and underscores the importance of personalized treatment approaches. It provides valuable insights into real-world treatment patterns and outcomes for pancreatic cancer patients. Understanding these factors may help optimize therapeutic strategies and improve patient management. Further prospective studies are warranted to validate these findings.







## Optimal Duration and Effectiveness of Neoadjuvant Endocrine Therapy in Women with Non-Metastatic Luminal HER2 Non-Amplified Breast Cancer: Single Institution Prospective Registry

Authors: Dr. Sara Tuncheva, Dr. I. Pandzharova, Dr. T. Yordanov, Dr. M. Musin, Dr. P. Spasov, Dr. M. Mihaylova, Dr. S. Velchova, Assoc. Prof. Dr. A. Konsoulova

Neoadjuvant Endocrine Therapy (NAET) is increasingly used in menopausal women with non-metastatic luminal HER2 non-amplified breast cancer. Its use is still in well selected patients with the intent to achieve preoperative downstaging of the disease and to increase the possibility for breast-conserving surgery. In addition to the low toxicity of this therapeutic approach and the lack of deterioration in patients' quality of life, NAET can also be used as a tool to determine in vivo endocrine sensitivity.

At our Medical Oncology clinic at the University Hospital Ivan Chermozemski, Sofia we run a prospective data collection of such patients and we will present an analysis of our cohort of patients with the aim to identify predictive biomarkers and to determine the optimal duration of the therapy.

Neoadjuvant endocrine therapy is an effective and safe option for non-metastatic luminal HER2 non-amplified breast cancer. Given the favorable safety profile of endocrine therapy, NAET is a therapeutic alternative and is largely discussed as a treatment strategy.

**Keywords:** non-metastatic luminal breast cancer, neoadjuvant endocrine therapy, predictive biomarkers

## Trastuzumab deruxtecan in Patients with Metastatic HER2 Positive Breast Cancer – Real-World Retrospective Data Analysis from a Single Institution

Authors: Dr. M. Musin, Dr. Ivelina Pandzharova, Dr. P. Spasov, Dr. Ts. Yordanov, Dr. S. Tuncheva, Assoc. Prof. Dr. A. Konsoulova

The rates of expression of the human epidermal growth factor receptor 2 (HER2) is an important predictive and prognostic biomarker for patients with both early and metastatic breast cancer (BC). The introduction of anti-HER2 blockade for patients with metastatic HER2 positive disease (IHC 3+ or IHC2+ ISH+) is the first impressive example for a significant improvement in outcomes in the metastatic setting of breast cancer patients.

The antibody-drug conjugate trastuzumab deruxtecan has been introduced in recent years after the results of the clinical trial Destiny breast 03. Data from other DB trials such as DB 1, 2, 12 and Daisy trials have ascertained the role of this therapy as an early line in the metastatic setting.

We present a retrospective analysis of our population and assess survival, treatment patterns and safety.

**Key words:** metastatic breast cancer, HER2 low status, trastuzumab deruxtecan

## Trastuzumab Deruxtecan in Patients with Metastatic HER2 Low Breast Cancer – Real-world Retrospective Data Analysis from a Single Institution

Authors: Dr. Ivelina Pandzharova, Dr. M. Musin, Dr. Ts. Yordanov, Dr. S. Tuncheva, Dr. P. Spasov, Assoc. Prof. Dr. A. Konsoulova

The rates of expression of the human epidermal growth factor receptor 2 (HER2) is an important predictive and prognostic biomarker for patients with both early and metastatic breast cancer (BC). Until recent, HER2 status was classified dichotomously as either positive (IHC 3+ or IHC2+ ISH+) or negative (IHC 0, IHC1+ or IHC2+ , ISH-). During recent years a new biological subtype has been identified - HER2 low (IHC 1+ or IHC2+ ISH-), following the introduction of a the antibody-drug conjugate trastuzumab deruxtecan. Identification of HER2-low status has introduced a change in the treatment algorithm in patients with HER2-low mBC, who have previously received at least 1 line of chemotherapy (as per protocol DESTINY-Breast04).

We have analyzed retrospectively our population and assess progression-free survival (PFS) and overall survival as well as assess the safety profile.

**Key words:** metastatic breast cancer, HER2 low status, trastuzumab deruxtecan

## (Lack of) Palliative and Supportive Care in Bulgaria – Prospective Analysis of Risk Assessment and the Needs for Significant Improvement, Using the “Surprise Question”

Authors: Dr. Tsvetan Yordanov, Dr. P. Spasov, Dr. Ivelina Pandzharova, Dr. M. Musin, Dr. Sara Tuncheva, Dr. Svetlana Velchova, Dr. T. Karanikolova, Assoc. Prof. Dr. Assia Konsoulova

Patients, diagnosed with metastatic stage of cancer should be assessed for the need of supportive and palliative care. In Bulgaria the concept of active vs palliative therapy is contradicting those two complimentary approaches. Access to palliative care is considered a top priority of any health system, but not in Bulgaria.

We present an analysis of all patients, treated at our clinic for 1 month and identify the significant lack of assessment of need for supportive and palliative care. Introduction of ENABLE approach and potential next steps are also discussed.



## This is a long, narrow, horizontal artwork, possibly a tapestry or a long painting. It features a repeating pattern of stylized, colorful shapes and symbols. The design is composed of various elements: spirals, circles, and abstract forms in shades of yellow, orange, red, blue, and black. The background is a dark, textured brown. The overall effect is a vibrant, rhythmic, and somewhat abstract composition.

# Examining the Experiences of Older Adult Caregivers Who Care for a Spouse in Active Cancer Treatment: A Convergent Parallel Mixed Methods Study

Valentina Donison, RN, MN, Year-4 PhD Student

Supervisor: Dr. Martine Puts

Committee Members: Dr. Shabbir Alibhai, Dr. Katherine McGilton, Dr. Assia Konsoulova

**Background:** Due to population aging, the number of older adults with cancer will double in the next 20 years. In Bulgaria, most informal care is provided by family caregivers. To date, no study has been conducted on older adults who are the primary caregivers to a spouse in active cancer treatment. Therefore, this descriptive study addresses six research questions in Bulgaria, including the type and amount of care provided, its impact on caregivers' health-related quality of life (HRQOL), distress, burden, and the positive aspects of caregiving.

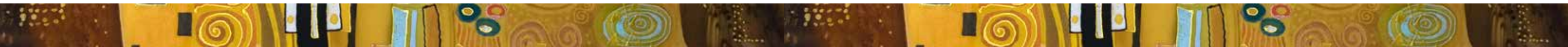
**Methods:** An exploratory mixed-methods convergent parallel research design was used. Older adult caregivers ( $\geq 65$  years of age) to a spouse in active cancer treatment are currently being recruited at the University Specialized Hospital for Active Oncology in Sofia, Bulgaria. Ninety caregivers will complete a questionnaire, and 10-15 caregivers will be recruited to reach information saturation for the qualitative interviews. Descriptive statistics and linear regression analyses will be used to examine RQS 1-4, and thematic analysis will explore RQS 4-5. The results will be integrated into a synthesized convergence joint display table.

**Preliminary Results:** To date, 92% of the participants have been recruited for the survey. Data entry has been completed, and a full analysis will follow. A total of 12 in-depth interviews have been conducted, transcribed and translated from Bulgarian to English. A total of eight participants were female and four were male. All 12 interviews have been analyzed. Preliminary analysis revealed nine main themes: time spent on caregiving, type of care provided, caregiver burden, caregiver psychological distress, impact on HRQOL, learning to be a caregiver, positive caregiving experiences, support received and supportive needs for caregivers. After the complete data set is analyzed, these findings will be explored and compared with the survey results.

**Expected Impact:** This study's findings will inform the development of interventions to improve HRQOL and support for older adult caregivers to a spouse in active cancer treatment. This study may also create awareness among clinicians who provide care to older adults about the support this population needs.

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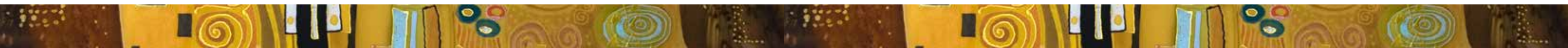




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