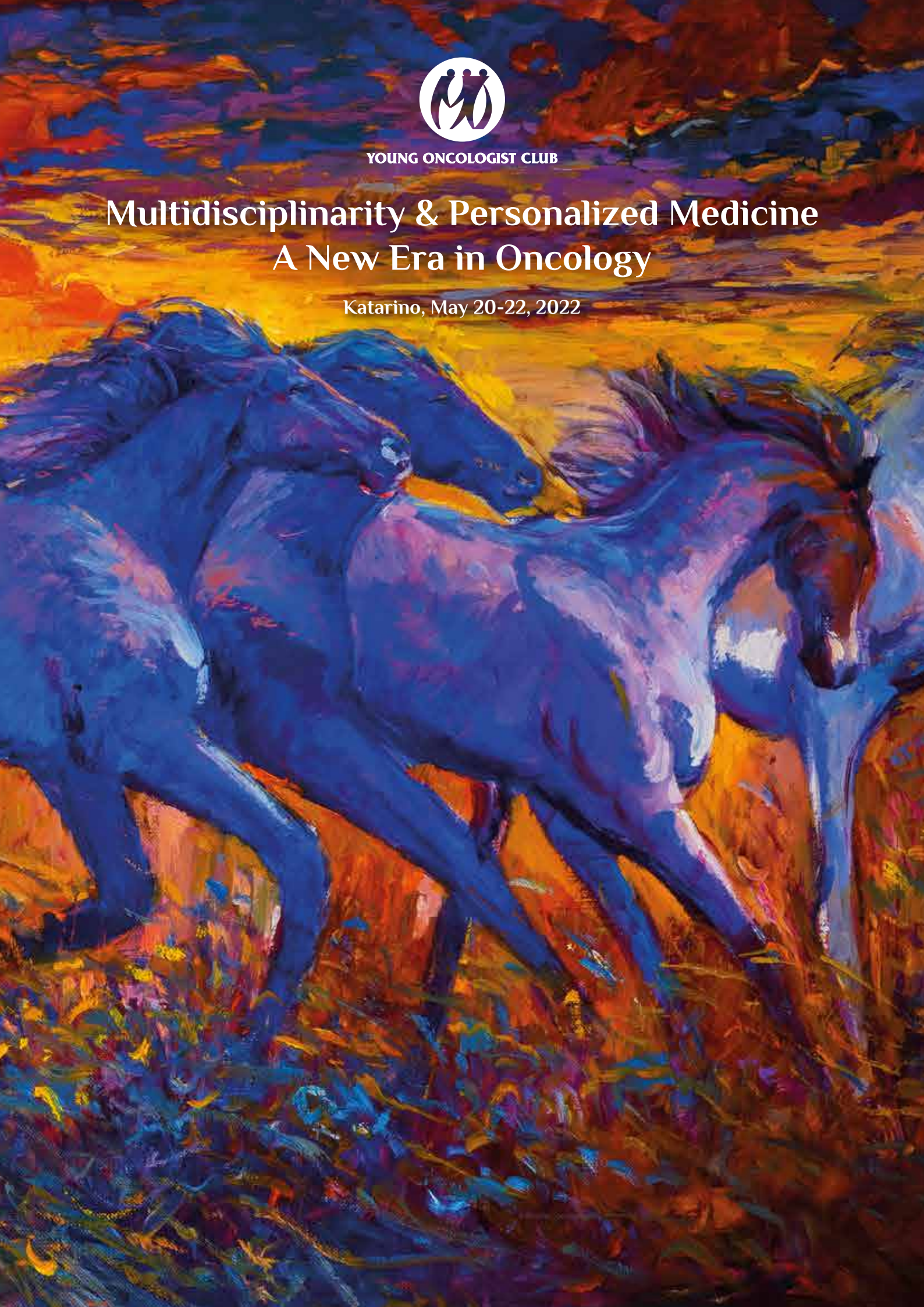


YOUNG ONCOLOGIST CLUB

Multidisciplinarity & Personalized Medicine
A New Era in Oncology

Katarino, May 20-22, 2022

YOUNG ONCOLOGIST CLUB

IX INTERNATIONAL MEETING OF YOUNG ONCOLOGIST CLUB BULGARIA
MULTIDISCIPLINARITY & PERSONALIZED MEDICINE
A NEW ERA IN ONCOLOGY

Katarino, May 20-22, 2022

PROGRAMME

Friday, May 20, 2022 (Day 1)

Conference opening/Welcome addresses – Young Oncologist Club Bulgaria, Balkan Investigation Network of Oncology

LUNG CANCER SESSION

Moderators: N. Chilingirova & S.Nedeva & P. Balikova

10.10 – 10.30 Beyond Age and Pack Years – How might the Integration of Biomarkers and Clinical Scores aid to overcome Current Challenges in a Lung Cancer Screening Program, W. Voigt

10.30 – 10.50 PET/CT Imaging of Lung Cancer Response to Immunotherapy - RECIST and PERCIST Criteria. Progression and Pseudoprogression, I. Virgolini

10.50 – 11.05 Management of SCLC by Immunotherapy, S. Baka

11.05 – 11.25 Innovative Diagnostics: NSCLC and SCLC, M. Papotti

11.25 – 11.45 What are the Perspectives to Combined Radiotherapy with Immunotherapy? /On the Example of Lung Cancer/, T. Hadjieva

11.45 – 11.55 Immune Therapies for Advanced NSCLC: Current Clinical Practice, Chr. Manegold

11.55 – 12.10 New Molecular Targets for NSCLC Treatment - a Chinese Position, L. Zhang

12.10 – 12.30 Clinical Impact of PET/CT in Radiotherapy Planning and Era Radiation Therapy Follow-up of Lung Cancer, R. Mititelu

12.30 – 13.10 Amgen Symposium

13.10 – 13.50 Lunch

13.50 – 14.10 How to understand Results of Clinical Trials, I. Donev

14.10 – 14.20 Examples of Clinical Results Application in Practice, L. Pilz

14.20 – 15.10 Interactive Tumor Board - R. Krasteva, A. Kounsolova, N. Chilingirova, I. Virgolini, A. Tomova, B. Iliev, P. Balikova, S. Kutov, Chr. Manegold, L. Pilz.

15.10 – 15.30 The Benefits of Comprehensive Genomic profiling of Foundation Medicine in Patients with NSCLC, M. Koleva

15.30 – 16.30 Astellas Symposium

Coffee Break

16.30 – 17.10 Pfizer Symposium 1

17.10 – 17.50 Astra Zeneca Symposium – Lung Cancer

17.50 – 18.30 Roche Symposium

18.30 – 19.10 Boehringer Ingelheim Symposium

19.10 – 19.30 Spectrum of Administration of Lonsurf and Onivyde – S. Nedeva

19.30 – 19.50 Personalized Medicine in Oncology. Why, When, How?, R. Krasteva

POSTER SESSION

14.00 – 19.45

20.30 – 23.00 Dinner

Saturday, May 21, 2022 (Day 2)

BREAST CANCER SESSION

Moderators: Al. Gerasimov & A. Fakirova & B. Iliev

08.40 – 09.00 Anthracyclines in the Treatment of Breast Cancer - When, Where, Why, S. Volovat

09.00 – 09.20 Immunotherapy of Breast Cancer, Chr. Zielinski

10.00 – 10.20 Erleada in Metastatic Hormone Sensitive Prostate Cancer, Al. Gerasimov

10.20 – 11.00 Bayer Symposium

MELANOMA MALIGNUM SESSION

Moderators: K. Zhelev & T. Karanikolova & S. Kutov & Chr. Manegold

11.00 – 11.20 SLN Lymphoscintigraphy with Subsequent SPECT/CT Imaging in Malignant Melanoma, S. Sergieva

11.20 – 11.40 PET/CT Imaging of Malignant Melanoma Response to Immunotherapy - RECIST and PERCIST Criteria. Progression and Pseudoprogression, P. Castellucci

11.40 – 12.00 Drug pathway in Medical Oncology - V. Grigorova, R. Krasteva

12.00 – 13.00 Lunch

13.00 – 13.30 Workshop Young Oncologists Competition – Compare our Knowledge - Interactive Session

13.30 – 13.50 Multidisciplinary Approach in Diagnostics and Treatment of HCC, K. Ivanov, K. Petkova

13.50 – 14.30 Astra Zeneca Symposium – Breast and Ovarian Cancer

14.30 – 15.30 Eli Lilly Symposium

15.30 – 16.40 MSD Symposium

Coffee Break

16.40 – 17.20 Pfizer Symposium 2

17.20 – 18.20 Novartis Symposium

18.20 – 19.00 TEVA Symposium

19.00 – 20.00 BMS Symposium

20.30 – 23.00 Dinner

Sunday, May 22, 2022 (Day 3)

Moderators: R. Krasteva & Z. Zahariev & M. Koleva & A. Konsoulova

10.00 – 10.15 Epidemiology of Malignant Melanoma in China, Yu Xu

10.15 – 10.35 Surgical Approach and Importance of Neoadjuvant Therapy in Borderline Resectable and Locally Advanced Pancreatic Head Carcinoma, Ts. Trichkov

10.35 – 11.00 Use of Eribulin in Combination with Trastuzumab in HER2 + Breast Cancer - Clinical Experience and International Studies, K. Petkova

11.00 – 11.40 Pierre Fabre Symposium

11.40 – 12.00 Poster Rewards

Dr. Rossitza Krasteva

Welcome to the IX International Meeting of Young Oncologist Club, Katarino May 20-22, 2022

DEAR COLLEAGUES,

We are pleased to welcome you to the IX International Meeting of Young Oncologist Club – Multidisciplinarity & Personalized Medicine – A new era in Oncology.

We will present and discuss the multisciplinary approach that provide the best comprehensive treatment plans for patients with cancer. The personalized medicine in oncology is expected to be a standard applied for every patient.

The agenda includes sessions and discussions on new treatments for breast cancer, lung cancer, prostate cancer, malignant melanoma and other topics concerning the latest advances in medical oncology.

Through clinical cases debates, lectures and panel discussions, the meeting will provide a forum to discover and develop the smartest ideas in cancer care because we are committed to bringing intelligence to the point of care - all the way from diagnosis to survival.

Due to technical advances and cancer research, as well as with our united forces we can improve the medical treatment for our patients. The new era in oncology starts with us.

I hope that each of you will find new inspiration and knowledge during these two days. Enjoy, learn and share your experience. I declare the IX International Meeting of Young Oncologist Club open!

Prof. Wieland Voigt

Beyond age and pack years – How might the integration of biomarkers and clinical scores aid to overcome current challenges in a lung cancer screening program

Lung cancer is the leading cause of cancer related mortality worldwide. One reason is that still more than two thirds of patients are diagnosed with advanced disease. Cigarette smoking is the most important risk factor. Annual low dose chest CT screening can reduce lung cancer related mortality as it was demonstrated in recent lung cancer screening studies. However, several challenges still exist with low dose chest CT based lung cancer screening such as optimal selection of individuals for lung cancer screening programs, personalization of screening intervals, specification of individualized follow up intervals for nodule management or the detection of incidental findings. Screening programs like the national program in the US select participants based on age and smoking habits but these eligibility criteria seem to miss around half of lung cancer cases. Consequently, more comprehensive definition of an individual's baseline risk is required. Therefore, aside from smoking habits and age, respective risk models could include factors like gender or ethnicity, comorbidities like COPD, occupational factors, environmental factors or specific biomarkers. Current national screening programs do recommend annual screening. However, recent evidence suggest that based on a baseline risk, screening intervals could be individualized. Such baseline risk could be defined by the result of initial low dose chest CT or a combination or clinical, occupational and environmental risk factors plus biomarkers. In case of indeterminate lung nodules combinations of nodule volume and biomarkers could aid the decision to conduct a biopsy or further follow up and guide the selection of follow up intervals. Overall, risk stratification/screening personalization based on clinical (including occupational and environmental risk factors) scores or combinations of clinical and biomarker scores might help to increase the efficacy of a lung cancer screening program, reduce the number of required serial CT scans and with that lessen radiation exposure and ultimately reduce the costs of a screening program.

In my lecture I will provide an overview on the general role of clinical risk factors and biomarkers for the different steps in lung cancer screening (patient selection, work up of indeterminate lung nodules, definition of further screening intervals after baseline scan). With the focus on the selection of individuals for lung cancer screening, I will summarize the current evidence for different clinical scores and biomarkers in more detail.

Professor Voigt studied medicine at the Medical University in Hannover and Martin-Luther-University in Halle/Wittenberg, Germany. After graduation he took an additional 2 years training in molecular & tumor biology and pharmacology at Roswell Park Cancer Institute in Buffalo, USA. He continued his career at Martin-Luther-University Halle/Wittenberg and became a board-certified specialist for Internal Medicine, Hematology and Oncology as well as Palliative Care. He holds a doctoral degree in medicine and is habilitated for Internal Medicine and Oncology. After 13 years serving in Halle in various leading positions, Professor Voigt took a position as a global Chief Medical Officer at Siemens Healthineers where he in addition served in a role of a principle key expert. As further expansion of his assignments he was appointed for a professorship at Steinbeis University for Innovation in Oncology as part of the Steinbeis Transfer Institute Medical Innovations and Management. While keeping his appointment at Steinbeis University, Professor Voigt decided to take a new challenge in his career and founded his own company to provide medical education and advisory services mainly to the healthcare industry. His main focus is to drive biomarkers and technologies to enable personalization of cancer early detection and management.

Prof. Irene Virgolini

Prof. Irene Virgolini is the Director of the University Clinic of Nuclear Medicine at the Medical University Innsbruck. Prof. Virgolini first studied medicine at the University of Vienna, where she also promoted in 1987. Habilitation also took place at the University of Vienna: 1992 in Experimental Nuclear Medicine and three years later in the field of internal medicine. In addition, she obtained the specialist physician's certificate for internal medicine and the additional specialist for nuclear medicine. She began her professional career as an assistant doctor at the former Secondary Medical University Clinic and at the University Clinic for Nuclear Medicine of the AKH in Vienna, where Virgolini also set up a working group with a focus on experimental oncological nuclear medicine. In 2000, Virgolini was appointed medical director of the Institute of Nuclear Medicine at Lainz Hospital, Vienna. During her work at the Vienna University Hospital, Virgolin's main interest in oncological radioisotope therapy ("Targeted Radionuclide Therapy"), in particular the development and establishment of new experimental nuclear medicine therapy forms (eg 90Y-DOTA lanreotide or analogue therapy in refractory tumor patients, 90Y-HMCF1 antibody therapy in ovarian cancer patients) in the clinic. Patents were also acquired for the developed radiopharmaceuticals in this experimental clinical area. Prof. Virgolini, in addition to her work as a senior physician in the "in vivo" area at the University Clinic for Nuclear Medicine in the Vienna University of Medicine (AKH), has introduced a number of special nuclear medical examinations in recent years and has established these in broad use at the Vienna University Hospital. Numerous invitations to guest lectures and a wide range of awards to the young doctor's group confirm the international importance of these new developments in nuclear medicine.

Prof. Virgolini has published more than 200 papers, her total impact factor is around 1000, the Hirsch Index 40 (based on Web of Science). She presented > 300 lectures on the topics of molecular therapy worldwide. 2018 Virgolini became the President of WARMTH.

Dr. Sofia Baka

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 from the Medical School of the Aristotle University of Thessaloniki in 1993, and completed her Specialist Training in Internal Medicine in 2001, at the Hippocration 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. He 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

Innovative Diagnostics: NSCLC and SCLC

Mauro Papotti, University of Turin, Italy

The 2021 World Health Organization (WHO) Classification of Thoracic Tumors aimed at improving the pathologic and genetic classification of lung tumors including non-small cell lung carcinomas /NSCLC, favoring more appropriate therapeutic decisions. Basically, the use of morphology first, followed by immunohistochemical and molecular techniques was confirmed. The latter procedures helped to describe novel and rare entities.

Relevant changes, among others, included: a) a paragraph describing diagnostic clues for small biopsy or cytology samples, b) the relevance of distinguishing in situ from minimally invasive from invasive adenocarcinomas (ADC) and the need of reporting percentages of histological patterns within the latter (invasive ADC), and of providing tumor grading and stage (with the T-factor based on size of the invasive ADC component, only); c) reclassification of some former LCC, eg lymphoepithelial carcinoma (now a squamous cell carcinoma subtype) and of other undifferentiated malignancies, eg thoracic SMARCA4-deficient undifferentiated tumors; d) recognition of spread through airspaces (STAS) and other prognostic factors.

Regarding small diagnostic samples, since up to 70% of lung cancers will be inoperable, a recommendation was made to provide an as much accurate as possible diagnosis, but at the same time sparing tissue for possible further molecular analyses. Thus, morphology is the basis for cancer subtyping except for undifferentiated carcinomas that deserve a minimum panel of immunomarkers to identify squamous, glandular or neuroendocrine features. Generally, irrespective of the specimen type (biopsy or cytology), one marker per each of the above lineages is advised, including p40, TTF1, and synaptophysin/chromogranin, respectively. In case of inconclusive immunoprofiles, a generic diagnosis of NSCLC is suggested, avoiding further categorization, including "large cell carcinoma" or other terminologies. Molecular testing for driver mutations or fusions and PD-L1 protein assessment are possible in small samples, provided viable tumor cells are present in the specimen.

Regarding pulmonary neuroendocrine neoplasms (NEN), the 2021 WHO classification confirmed the subtypes of well differentiated typical/atypical carcinoids, high grade large and small cell NE carcinomas (LCNEC and SCLC) and combined carcinomas (with adeno- or squamous components). The diagnostic criteria were unchanged: mitotic count, presence of necrosis and cell morphology. News included:

1-For metastases or biopsy specimens it is recommended to refrain from subtyping and report "metastatic carcinoid tumor", or "carcinoid NOS";

2-For consistency, mitotic count is restricted to certain figures (excluding pyknoses etc) and expressed per 2 mm2 area (not per 10 HPF);

3-Ki67 is accepted only for distinguishing carcinoids from SCLC/LCNEC in biopsies, in the lack of reliable cutoffs for the various categories. Its value has been recognized and should be reported, especially in metastatic settings. Lung NENs with the morphology of carcinoids, but a high mitotic count (<10) and Ki67 index (>20%) have been recognized, similar to abdominal NET-G3, but reported as LCNEC (with a note stating the growth pattern of a "carcinoid with high proliferation").

4-Genetically, biallelic inactivation of TP53 and RB1 are reported in SCLC and a fraction of LCNECs. These latter also contain tumors genetically related to NSCLC with KRAS andSTK11/KEAP1 mutations. In SCLC, four molecular subtypes (ASCL1, NeuroD1, POU2F3 gene mutations and a fourth triple negative group) were identified with different neuroendocrine and/or immunity/inflammation gene signatures. Conversely, carcinoids have a lower mutation burden, restricted to chromatin-remodelling genes (histone modifiers) and SWI/SNF complex (MEN1, ARID1A, EIF1AX, PSIP1 genes).

5-Combined carcinomas are characterized by two merged components of SCLC/LCNEC and an adeno- or squamous carcinoma, with clinical outcome driven by the highest grade one. These tumors are different from conventional adenocarcinomas with NE differentiation (no clinical significance) and from EGFR-mutated adenocarcinomas with therapy-driven SCLC transformation.

Lung cancer mortality is decreasing in some countries, also thanks to the more precise classification schemes, more accurate staging of non-mucinous adenocarcinomas and the bulk of molecular data and of druggable genetic drivers, that support the use of targeted therapies. Conversely, SCLC mortality was reduced just because of reduced incidence, with no survival improvement in recent decades. The successful treatment of a pulmonary carcinoma is, as expected, heavily linked to its correct classification. Novel morphological and molecular subgroups might help precisely selecting the best therapeutic option for each patient.

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 Berlucchi, 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).

Prof. Tatiana Hadjieva

What are the perspectives to combined Radiotherapy with Immunotherapy? /On the example of Lung cancer/

Early development of Radiotherapy and Immunotherapy has started in late 19 century. Historically convergence in increased clinical safety and advancement of radiation and immunotherapy now makes feasible their inclusion as part of combined-modality treatment approaches. Experimental studies gave firm rationale and later early clinical trials revealed practical pathway for their integrity. A modernization of the Steel hypothesis has been described, highlighting exploitable interactions of radiation and cancer drugs in the molecular era. Under this revised framework, radiation and immunotherapy agents may interact to improve clinical outcomes through 5 distinct mechanisms: (1) spatial cooperation (2) temporal modulation, (3) biological cooperation, (4) cytotoxic enhancement, and (5) normal tissue protection.

The presentation will shortly highlight these mechanisms and will show some early promising results on the example of lung cancer.

Prof. Hadjieva has graduated Medicine in Higher Medical University, Sofia, Bulgaria with an award for primacy. She receive 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.

Dr. 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. Hadjieva is a lecturer for medical and dentists students in several universities in Sofia and Stara Zagora, especially for English students; a senior lecturer and organizer of postgraduate education for Radiation therapy and lecturer in Oncology for different specialties as ENT, surgery, endocrinology, European School of Oncology.

She has been the Head of the State Commission for Radiotherapy licensing for many years.

For all this lifelong doctor and educational work in 2014 Prof. Hadjieva was decorated by Life appreciation "Prof. Chilov's" award for excellence in therapy and education at Medical University, Sofia.

Prof. Christian Manegold

Immune therapies for advanced NSCLC: Current clinical practice

Christian Manegold, MD, Heidelberg University, Germany

Since the arrival of Nivolumab in the clinic about ten years ago novel immune therapy by immune checkpoint inhibitors (ICO) has become one of the backbones of the medical management of advanced, non-mutant non-small cell lung cancer (not harboring targetable oncogenes) (wt NSCLC). Several specific monoclonal antibodies against the programmed death (PD-1) receptor, the programmed death-ligand 1 (PD-L1), and the cytotoxic T - lymphocyte-associated protein 4 (CTLA-4) receptor have been developed up to large randomized phase III trials indicating significant progress in progression free survival (PFS) and overall survival (OS) by the experimental therapies. Based on the outcome of these studies ICO have been approved in US, in Europe, and in Asia for wt NSCLC for first - and subsequent line use. Various ICO regimens have consequently been integrated in the current treatment algorithm of advanced NSCLC not harboring oncogenic drivers. Their today's use should follow modern personalized recommendations depending on PD-L1 status, smoking status, the tumor load, the general condition of the patient and toxicity issues by considering single agent therapy, immune- chemotherapy combinations as well as combinations from different immune therapeutic agents. The presentation is to review in short the currently proposed clinical practice.

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.

Dr Lincheng ZHANG M.D.

New Molecular Targets for NSCLC Treatment - a Chinese Position

MD in Pulmonary Medicine at Shanghai Chest Hospital, Shanghai Jiao Tong University

MBBS in Clinical medicine at Shanghai Jiao Tong University School of Medicine

Dr. Raluca Mititelu

Dr. Raluca Mititelu, is senior lecturer of Nuclear Medicine at the University of Medicine and Pharmacy Dr Carol Davila Bucharest. She is currently working as nuclear medicine specialist at the Cemtral University Military Emergency Hospital in Bucharest and also in private sector. She is the President of the Romanian Society of Nuclear Medicine and Molecular Imaging and member of the board of directors of the World Association of Radiopharmaceutical and Molecular Therapy (WARMTH). She is also a member of the European Association for Nuclear Medicine (EANM) and represents Romania as a national delegate to the World Federation of Nuclear Medicine and Biology (WFNMB).

He has participated as a guest lecturer in numerous national and international scientific events and is a reviewer for the World Journal of Nuclear Medicine. Dr. Raluca Mititelu was one of the initiators of the Balkan Congress of Nuclear Medicine, an event that will reach its 10th edition next year and will be organized in Romania.

Prof. Ivan Donev

How to understand Results of clinical trials

Although statistical models serve as the foundation of data analysis in clinical studies, their interpretation requires sufficient understanding of the underlying statistical framework. Cancer research is the soundest tool to generate new knowledge to advance oncology practice. Clinical trials testing new treatments are divided into different stages, called phases. Sometimes phase 3 trials involve thousands of people in many different hospitals and even different countries. Most phase 3 trials are randomised. This means the people taking part are put into treatment groups at random.

In this presentation I am going to try to answer several hard questions:

- Why randomised clinical trials are so important?
- What are the most important key end points in phase 3 clinical trials?
- Is 2+2=4 in medicine?
- What is relative risk, odds ratio and hazard ratio?
- Which results are statistically and/or clinically significant?
- Is subgroup analysis so important and when?
- How to interpret contradicting results from clinical trials?

Prof. Donev was born in 1975 in Varna. He graduated from English language school – Dobrich in 1994 and subsequently got his diploma from the Medical University – Varna in 2000. He is a specialist in Internal Medicine and Medical Oncology. He was conferred the degree of Doctor of Philosophy in Medical Science in Kanazawa University, Japan 2011. His interests are in the field of psycho-oncology and the colon and lung cancers. He has more than 25 scientific publications.

Prof. Lothar Pilz

Examples of Clinical Results Application in Practice

About 5% of cancer treatments are performed within clinical trials with a lack of non-rural residents or low-income individuals (JCO Oncol Pract 17:607-14;2021). The application of clinical results in practice are multifarious and reach from single measures to complete study design results. In this short note some aspects and examples are given.

(i) Human related quality of life is an important tool to evaluate treatment results in several cancer sites, such as brain tumors, breast and ovarian cancers, and malignant melanoma, but there are some concerns and difficulties in reporting those data (Qual Life Res 23:971–6;2014).

(ii) The use of liquid biopsy can complement or even replace imaging to monitor treatment response and be an important element in clinical follow-up care (Ann Oncol 30:1580–90;2019).

(iii) Biomarker assays that can assist the choice of the preferable treatment for individual cancer patients, and in the literature promising correlations of molecular features with cancer outcomes are described, but only a few of these ever translate to assays that come into common clinical use. One reason is the lack of careful validation studies (Oncol & Hematol Review 11:14–8;2015).

(iv) Often the reports of adverse events, as collection and abstraction, allowing to get knowledge of the patient's experience become lost in translation. This is especially important in often seen modest benefits and narrow therapeutic indices in oncological interventions. Therefore, standards and guidelines for tabulation, attribution assessment, and reporting of harms are urgently needed (Expert Opin Drug Saf 15:893-6;2016).

(v) For practical use knowledge on anti-cancer drug efficacy can be improved in looking at the interaction between clinical trials and real practice reports which can be performed as real practice studies in oncology. One main question here is to extend Phase III-studies to the general population since often patients are generally excluded on the basis of specific comorbidities, performance status, age ≥ 65 years, previous malignancies, brain metastases, active infections, psychiatric disorders, non-measurable disease, number and type of previous lines of chemotherapies or biologic therapies (World J Gastrointest Oncol 10:228-30;2018).

However, it is seen that many oncological clinical trials with their measures and report outcomes fall short of translation into benefits for patients (Trials 18:122;2017). One aspect to solve the problem is to keep in mind the needs of patients and clinicians in developing study protocols and study designs.

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

Assoc. Prof. Nataliya Chilingirova

Assoc. Prof. Chilingirova is a Head of The Medical Oncology Clinic at Heart and Brain Hospital in Pleven. She 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 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. She became an associate professor of oncology and introduces 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 (a project funded by EU grant). Author of more than 45 scientific papers in Bulgarian and international journals. Speaks German, English and Russian.

Dr. Antoaneta Tomova

Dr. Antoaneta Tomova is a specialist in medical oncology from Plovdiv, Bulgaria. She is currently the Head of the First Chemotherapy Department of Plovdiv Complex Oncology Centre.

Dr. Tomova has graduated the Medical University in Sofia in 1985. She has dedicated more than 25 years to medical oncology and chemotherapy. Her main areas of expertise are in the fields of medical oncology, palliative care, pain management, and symptom control.

Dr. Tomova has attended more than 60 specialized courses abroad so far. She is a member of Bulgarian Cancer Society, BUON, UICC, ESMO and ASCO, where she has presented a poster. She was named Doctor of the Year in 2009 from the National Association of Patient with Oncology Diseases, and was voted The Doctor Whom Patients Trust in 2012.

Dr. Tomova speaks 2 foreign languages - English and Russian.

Dr. Petya Balikova

Dr. Petya Balikova is a Medical Oncologist at the department of Medical Oncology in MHAT "Sv Sofia" since June 2021. Dr. Balikova graduated with distinction from Plovdiv Medical University – Plovdiv, 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. Samuil Kutov

Dr. Samuil Kutov is a graduate of medical oncology at Hagia Sophia Hospital. He worked as an ordinator doctor in the Department of Medical Oncology. He is assistant professor of medical oncology at the Department of Nuclear Medicine, Radiation Treatment and Medical Oncology. Consultant in oncology at The Victoria Cancer Patient Rehabilitation Program. He has received training in oncology centers in Switzerland, Austria, Poland, Israel. He is the author of articles on the treatment of lung tumors. There is a special interest in the treatment of neuro-endocrine tumors, tumors of the lung and breast.

Dr. Marchela Koleva

Dr. Marchela Koleva graduated from the Medical University in Sofia in 1992. From 1995 till 2012, she has worked and specialized in Internal medicine and in Medical oncology at Queen Joanna University Multiprofile Hospital for Active Treatment in Sofia, Bulgaria. She has also worked in the Department of Medical Oncology at Serdica Hospital in the period June 2012 - April 2013. She was the Head of headed the Department of Medical Oncology at Sofia Med Hospital in Sofia 2013-2015. Currently she headed the Deparment of Medical Oncology at Sveta Sofia Hospital.

Dr. Marchela Koleva has different specializations in oncology in Austria, Belgium and the UK.

She is a member of a number of European professional organizations (ESMO) as well as of the Bulgarian Medical Society, Bulgarian Oncology Scientific Society, BUON, Young Oncologist Club Bulgaria, Bulgarian Society of Oncology, and the Society of Interventional Oncology. She has specific interests in the medical treatment of solid tumors, having served as an investigator in more than 25 multicenter clinical trials for treatment of solid tumors (as a principal investigator in 10 of them). She has issued 3 monographs and has participated in the preparation of 2 textbooks of medical oncology

Dr. Koleva has more than 23 publications in the field of oncology and she is a co-author of the Victoria program for the rehabilitation of patients with lymhostasis.

Dr. Marchela Koleva speaks three foreign languages - Russian, English, and Spanish.

Dr Rossitza Krasteva

Dr. Rossitza Krasteva, the Chairman of Young Oncologist Club, is one of the leading specialists in medical oncology in Bulgaria. She has graduated the Medical University in Sofia in September 1994 and did two specializations after that - Internal Medicine (2001) and Oncology (2005). She also won a number of fellowships for further training in Bulgaria and abroad, as well as attended specialized courses in university hospitals in Italy, Greece, Germany and Switzerland.

All of Dr. Krasteva's professional and scientific interests are in the field of medical oncology. Her career as a medical oncologist includes working at the Clinic of Medical Oncology at the University Hospital Queen Joanna – ISUL, the International Oncology Consulting Center and Serdika Hospital in Sofia. She is currently the Head of Medical Oncology Clinic, Central Bulgarian Comprehensive Cancer Services, Uni Hospital, Panagyurishte. She has been a Principal Investigator and a sub-investigator in several phase II and III clinical trials for adjuvant treatment and treatment of metastatic disease in solid tumors. Dr. Krasteva is a member of Bulgarian Cancer Society, Bulgarian Association of Medical Oncology, The Balkan Union of Oncology, ESMO and ASCO. She was elected the first Chairman of Young Oncologist Club Bulgaria. Dr. Krasteva speaks 2 foreign languages - English and Russian.

Dr. Snezhina Nedeva

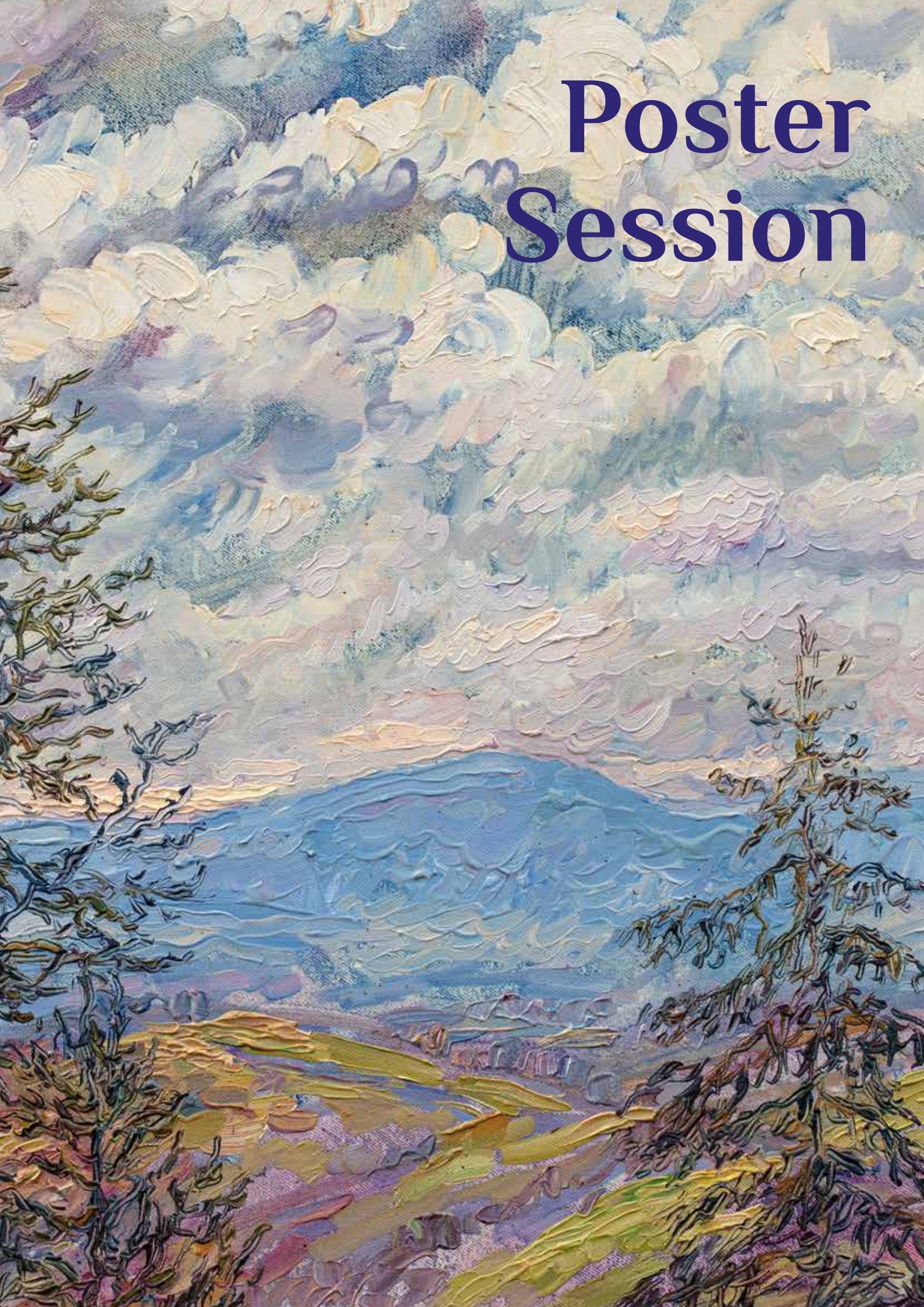
Spectrum of administration of Onivyde and Lonsurf

The new capabilities which the two drugs provide in the treatment of patients with metastatic pancreatic cancer, metastatic stomach cancer or cancer of the gastroesophageal connection are also supported by the brief overview of patients treated with Lonsurf and Onivyde for the period from 2018 to 2022.

Both medications provide a therapy chance for treated patients with a good safety profile that does not lead to deterioration of quality of life, based on our clinical experience with patients treated in the Oncology Center at Panagyurishte.

Dr. Snezhina Nedeva was born on August 12, 1987 in Plovdiv. She is a graduate of the Medical University of Plovdiv (2012) and has specialized in Medical Oncology from March 2015 to December 2020. Since February, 2021 Dr. Nedeva is a medical oncologist at the Oncology Center, Uni Hospital, Panagyurishte.

She is a member of BMA, the Young Oncologist Club and ESMO.



Poster Session

Bakalov, S. & Bezlova, A., 2022

St. Sofia Hospital, Dept. of Medical Oncology

Comparison of cancer patient parameters and progression-free survival/ overall survival

Cancer is a leading cause of death in adults, second to cardiovascular disease, with an estimate of over 600,000 deaths for 2022 in the U.S. alone. We aim to create an ever-expanding database of quantitative and quantified qualitative patient parameters in order to find trends in patient data and their correlation to progression-free survival (PFS) and overall survival (OS) for specific oncological diseases and their treatment regimens. Correlation between deviations in said trends and deviations in PFS/OS could prove to be useful as an early predictor of treatment outcome and could possibly guide treatment adjustments, while also marking the importance of data digitalization.

Keywords: cancer, database, treatment, survival

Dr Iveta Boranova

Total neoadjuvant strategy in rectal adenocarcinoma – improved local and systemic control

Iveta Boranova, Olga Karazhova, Petko Dochev, Detelina Valcheva, Petya Tuschieva, Elvira Stoyanova, Ivan Kazmukov, Hristina Ivanovska, Assia Konsoulova

Concurrent preoperative chemo-radiation is the standard of care in locally and locoregionally advanced cancer of the mid- and the lower third of the rectum. Achievement of treatment response and its degree, measured as partial, nearly complete or complete response (pCR) has proven to be of prognostic significance. Evidence-based medicine reports data that achievement of pCR may permit a delay in definite surgery or de-escalation from total mesorectal excision to local excision or even watch-and-wait strategy.

We present a case report of a patient with locoregionally advanced cancer of the lower third of the rectum with clinically and endoscopically confirmed pCR after chemoradiation. No surgery was done as per patient's preference and watch-and wait strategy is ongoing.

Med. Phys. Milena Dimcheva

Evaluation of the accuracy of radium-223 dichloride activity measurement in clinical practice

Milena Dimcheva[1], Teodor Sofiyanski[1], Sonya Sergieva[1], Aleksandra Jovanovska[1], Bozhil Robev[2]

1Department of Nuclear Medicine, Sofia Cancer Center, Sofia, Bulgaria

2Department of Medical Oncology, University Hospital St. Ivan Rilski, Sofia Bulgaria

Introduction: Radium-223 dichloride (Xofigo®) drug product is a ready-to-use, sterile, aqueous for intravenous injection. Although the volume of radium-223 dichloride for syringe preparation is determined by calculation based on the information on the manufacturer's label, control measurements of vials and syringes to verify individual treatment activity. Materials and Methods: Xofigo® (radium-223 dichloride injection) is supplied in single-use vials containing 6 mL of solution at a concentration of 1,100 kBq/mL (30 µCi/mL) with a total radioactivity of 6,600 kBq/vial (178 µCi/vial) at the reference date. The dosing scheme of radium-223 dichloride is 1.45µCi/kg body weight, given at 4-week intervals for six injections. The accurate measurement of radium-223 dichloride activity in the syringe immediately before and after administration is assured by adjustment of dose calibrator using a NIST–traceable radium-223 standard and corrected for decay using the date and time of calibration. Results: The patients weight range from 80 kg to 96 kg, therefore the doses ranging 127.03 µCi to 144.84 µCi. The administration of the activity is recommended to be slowly intravenous injection over 1 minute. The values for the decay correction factor are in the range from 0.83 to 1.13, respectively. The deviation of administered dose from the prescribed dose average is +1.8% with a range of –1.2% to +4.6%. The dose measured before administration ranges 132.3 µCi to 148.9 µCi. Deviation from the distributed dose was shown to average +2.9% with a range of –0.8% to +7.3%. The average residual dose post injection was 1.9 µCi or 1.6% of the pre injection activity in the range from 0.4 µCi to 5.5 µCi, respectively 0.3% to 3.6%. Subtraction of residual activity from this measured activity prior to injection and comparison with the prescribed dose showed a mean variation of +2.1% with a range of –0.3% to 6.1%. Conclusion: The results showed that the maximum residual dose of 5.5 µCi has been detected in one syringe only. The measured activity of 76.3 µCi resulted in a maximum variations, which is 6.1% lower than the residual dose.

Milena Dimcheva is a medical physicist at the Department of Nuclear Medicine in Specialized Hospital for Active Treatment of Oncological Diseases "Prof. Dr. Marin Mushmov", Sofia, Bulgaria, since 2010. She has received her BSc degree in Physical Sciences from the University of Sofia "St. Kliment Ohridski " in 2007 and her MSc in Medical Physics in 2010. From 2021 she is certified as a 'medical physics expert' (MPE) from the Medical University of Sofia. Her professional activity is mainly focused on quality control of nuclear medicine equipment.

Dr. Cvetelina Ivanova

Peutz-Jeghers syndrome – clinicopathologic features and approach considerations

Tzvetelina Ivanova[1], Eva Dimanova[2], Lachezar Dzhongov[2], Svitlana Bachurska[1]

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Peutz-Jeghers syndrome (PJS) is an autosomal dominant inherited disorder with variable penetrance characterized by intestinal hamartomatous polyps in association with characteristic mucocutaneous macular pigmentation. Although considered a rare disease with estimated prevelance from 1 in 50 000 to 1 in 200 000 individuals and equal gender distribution, Peutz-Jeghers syndrome is characterised by various clinical presentation and an increased risk for malignancies of gastrointestinal and extraintestinal organs of reproductive system, breast, pancreas, thyroid and lungs. Earliest symptoms usually present in first to second decade of life and begin with the appearance of melanocytic macules in perioral, perianal region and oral mucosa. Multiple benign polyps called hamartomas develop, showing specific location in small intestine (jejunum) but can also involve stomach and colon, causing nausea, vomiting, abdominal pain, intestinal obstruction and rectal bleeding.

Around 80-95% of patients have an identified mutation in STK11/LKB1 (serine-threonine protein kinase 11), located on chromosome 19p13.3 which is responsible for maintaining cell polarity and controlling cell proliferation. The diagnosis of this genetic disorder rests primarily on the histologic identification of the polyps along with molecular testing. It is important to recognize the specific features of the syndrome in order to prevent high morbidity and mortality in these patients and to perform presymptomatic testing of first degree relatives as estimated lifetime risk for developing a malignancy is 93%.

Clinical and histologic features, gross pathologic findings as well as common differential diagnosis, recommendation for preventive screening and clinical surveillance of patients will be covered in the discussion of a relevant case report.

Key words: Peutz-Jeghers syndrome, hamartomatous polyps, mutation.

Department of General and Clinical Pathoogy, University specialized hospital for active treatment in oncology, Sofia

Started learning Medicine in September 2013 and took a Master's degree in November 2019 in Medical University of Sofia. From March 2020 up to date – resident in Department of General and Clinical Pathology in University specialized hospital for active treatment in oncology, Sofia. Professional interests in diverse aspects of oncopathology - malignancies of genitourinary tract, skin, lungs and breast; morphological, immunohistochemical and molecular analysis of cancer. Member of European Society of Pathology. Foreign language skills in English and French. Leisure time activities – fitness, reading classic literature, watching detective series.

Dr. Angelina Karamfilova

The role of PD-L1 evaluation in advanced head and neck squamous cell carcinoma

Angelina Karamfilova[1], Katerina Mishovska[2], Kiril Popov[3] Svitlana Bachurska[1]

1 Department of General and Clinical Pathology

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Programmed death-ligand 1 (PD-L1) is a transmembrane protein that binds to the programmed death-1 receptor (PD-1) during immune system modulation. The PD-1 receptor is typically expressed on cytotoxic T-cells and other immune cells, while the PD-L1 ligand is typically expressed on normal cells. Normal cells use the PD-1/PD-L1 interaction as a mechanism of protection against immune recognition by inhibiting the action of T-cells. Many tumor cells are able to upregulate the expression of PD-L1 as a mechanism to evade the body's natural immune response.

PD-L1 upregulation in head and neck squamous cell carcinoma (HNSCC) is a biomarker for response to anti-PD-1 therapy with KEYTRUDA (pembrolizumab) in patients with metastatic or recurrent HNSCC who had not previously received systemic therapy for metastatic disease or with recurrent disease who were considered incurable by local therapies.

The evaluation of PD-L1 upregulation is made by pathologists using PD-L1 IHC 22C3 pharmDx - a qualitative immunohistochemical (IHC) assay in formalin-fixed, paraffin-embedded (FFPE) tissue samples. PD-L1 protein expression in HNSCC is determined by using Combined Positive Score (CPS).A sphere of interest and discussion is the correlation between PD-L1 and p16 expression in HNSCC, as the modification of PD-L1 expression during treatment.

We present you one clinical case from our practice of patient with advanced HNSCC on KEYTRUDA therapy.

Key words: PD-L1, p16, head and neck squamous cell carcinoma

Dr. Angelina Karamfilova was born in Sofia, Bulgaria. Obtained medical degree at Medical University, Sofia in 2013. Completed pathology residency at the Department of General and Clinical Pathology of University Hospital "Alexandrovska" in 2020. During the residency training was an assistant professor in pathology, teaching medical and dental students at the Medical University, Sofia. Winner of Giordano Fellowship in 2020, funded by the European Society of Pathology and completed a subspecialization in dermatopathology at the University Hospital of Maastricht, Netherlands, in 2021. Member of the European Society of Pathology since 2015. Currently working in the Department of General and Clinical Pathology at the National Oncology Hospital, Sofia, Bulgaria. Spheres of interest are dermatopathology, head and neck pathology, breast and GI tract pathology.

Dr. G. Karapetkova

Functional Imaging of Neuroendocrine Tumors (NETs) with 18F-FDG and 99mTc/68Ga Radiolabelled Somatostatin Analogues

G. Karapetkova, S.Sergieva, R.Krasteva, H.Ashimov, N. Tolev, V.Stanchev

Introduction; Neuroendocrine tumors (NETs) have specific biological and clinical characteristics, the most essential is a high density of somatostatin receptors at the cell membrane. This feature allows their visualization with 99mTc/68Ga radiolabelled somatostatin analogues.

NETs, however, typically have a wide range of cellular differentiation. PET/CT with 18F-FDG has a limited value in tumors with well and moderate (G1,G2) differentiation due to a near-normal glucose metabolism of these tumors. High grade (G3) NETs may show elevated metabolic turnover and lose of receptor expression.

As 18F-FDG and 99mTc/68Ga somatostatin analogues determine distinct tumor characteristics, they could have complementary role in imaging of heterogenic well-differentiated and low-differentiated NETs.

This is essential for precise therapeutic behavior: application of somatostatin analogues with a therapeutic purpose at G1/G2 NETs or more aggressive target or chemotherapy in G3 tumors.

Methods: The imaging findings with 18F-FDG and 99mTc/68Ga somatostatin analogues on 2 patients with a diagnosis of primary or recurrent NETs were compared and correlated with tumor grade on histology, based on Ki67 index and mitotic proliferation.

Results: Our results showed that there were greater uptake of 99mTc/68Ga somatostatin analogues than 18F-FDG in G1/G2 NETs. In high grade NET and dedifferentiated metastatic lesions, there was intensive 18F-FDG uptake due to high metabolic rate and low uptake of radiolabelled somatostatin analogues because of low receptor expression. There was a significant correlation with predominant tumor uptake of 18F-FDG or 99mTc/68Ga tracers according to histological tumor grade.

Conclusion: Functional imaging with both 18F-FDG and 99mTc/68Ga somatostatin analogues has potential for more comprehensive tumor assessment in NETs with heterogenic cell differentiation and receptor expression.

Dr. Ivan Kazmukov

Merkel-cell carcinoma – a diagnostic and therapeutic challenge still in 2022

Ivan Kazmukov, Theodor Popov, Elvira Stoyanova, Petya Tuschieva, Olga Karazhova, Petko Dochev, Iveta Boranova, Assia Konsoulova

The group of the neuroendocrine tumors consists of different clinical entities, arising from almost any organ of the body. The Merkel-cell carcinoma (MCC) is a highly aggressive neuroendocrine neoplasm of the skin. Its precise tumor ethiogenesis remains unclear and recent research has suggested epidermal stem cells and dermal neuroendocrine steam cells as MCC source. Besides the ultraviolet radiation, the presence of immune suppression and advanced biological age, together with the infection with Merkel-cell polyomavirus are also considered as risk factors. MCC is frequently diagnosed in advanced stage and is known for its high recurrence rates and early and aggressive metastatic spread.

We present a case-report of a young patient with no immune compromise and MCC. The diagnostic, staging and the treatment were managed at the Comprehensive cancer center (CCC) – Burgas, Bulgaria. After initial surgery, a treatment with first line systemic immunotherapy with Avelumab was initiated and is still ongoing as of April 2022. Best treatment response is assessed as stable disease. We also discuss the management of other patients with MKK, treated at the CCC – Burgas.

Dr. Feodor Odzhakov

Metastatic colorectal cancer – the therapeutic challenge in the era of genetic testing

Feodor Odzhakov, Svitlana Bachurska
Department of General and Clinical Pathology
University Specialized Hospital for Active Treatment of Oncology – Sofia

Colorectal cancer (CRC) is the third most common cancer in men and the second most common in women. Approximately one in four patients with CRC is diagnosed in stage IV. Thus, a significant part of cancer research has been focused on identifying therapeutic advances in the field of metastatic colorectal cancer (mCRC). Currently, there are several biomarkers that help clinicians in making the optimal treatment decision: KRAS, NRAS, BRAF mutations, and microsatellite instability (MSI) or mismatch repair (MMR).

A case of 49-year-old male is presented. The patient is diagnosed with stage IV mCRC with primary localization in the ascending colon and liver metastases. A surgical resection has been performed. Further, pathologic examination and assessment of the resection has been completed following the standard protocol. Genetic dPCR examination for KRAS, NRAS and BRAF has been performed together with DNA mismatch repair status evaluation. Histopathologic analysis has established adenocarcinoma of the colon, staged pT3N1aM-1G2L1V0Pn0R0. Given the additional test results, it has been concluded that the mCRC is of BRAF-mutant type, KRAS/NRAS wild type and microsatellite stable.

Biomarker testing in mCRC patients has become routine in clinical practice, aiming in personalized treatments for cancer patients. Even so, in some cases the test results impose further entanglement, proving the necessity for wider discussion in terms of improving protocols and guidelines.

Key words: mCRC, BRAF mutant, microsatellite stable, therapy.

Dr. Feodor Odzhakov, MD, PhD graduated Medicine at Medical Faculty, Medical University - Sofia in 2014. During his studies he showed interest in various fields of medicine, actively participated in scientific congresses in the country and abroad, contributed to the revival of the scientific journal Praemedicus since 1925. In December 2014 he started his clinical career at Department of Forensic Medicine and Deontology, University Hospital "Alexandrovska" - Sofia, where he worked until January 2021 and successively acquired a specialty in forensic medicine and completed his doctoral dissertation. From January 2021 he is part of the team of Department of General and Clinical Pathology at the University Hospital of Oncology - Sofia, where he specializes under the guidance of Assoc. prof. Dr. Svitlana Bachurska, MD, PhD. Dr. Odzhakov's research focuses on the problems of morphological identification of tumors. In addition, he is an active member of a variety of research teams, which is why he develops publications and abstracts related to various scientific fields of medicine and healthcare. Dr. Odzhakov has a number of publications and citations in Bulgarian and foreign indexed journals, as well as active participations in scientific congresses and conferences in the country and abroad. He is a member of the Bulgarian Society of Pathology, the European Society of Pathology and the Bulgarian Society of Forensic Medicine

Dr. Teodor Sofiyanski

Clinical experience with Radium-223 dichloride in two clinical cases

Teodor Sofiyanski, Milena Dimcheva, Sonya Sergieva[1], Rossitza Krasteva[2], Zahary Zahariev[3]

1Department of Nuclear Medicine, Sofia Cancer Center, Sofia, Bulgaria
2Department of Medical Oncology, Uni Hospital, Panagyurishte, Bulgaria
3Department of Radiotherapy, Uni Hospital, Panagyurishte, Bulgaria

Introduction: Prostate cancer is the most frequently diagnosed cancer among men in almost all European countries and North America. Bones are the most commonly affected in metastatic castration-resistant prostate cancer (mCRPC), which is associated with pain and pathological fractures. The long-term prognosis for patients with mCRPC is poor, which varies significantly depending on individual disease characteristics. Yet still remain tremendous challenges in all treatment aspects of the disease.

Radium-223 dichloride (Xofigo) is a first-in-class targeted alpha therapy indicated for treating secondary bone lesions from mCRPC without visceral and soft tissue metastases.

Cases presentation: We present two mCRPC patients with multiple osseous metastases, who underwent treatment with Xofigo:

Case 1

A 47-year-old man, presented with dysuric complaints diagnosed with prostatic adenocarcinoma, Gleason score 6 (3+3) pT2NxM0. He underwent a radical prostatectomy, radiotherapy, treatment with Enzalutamide and luteinising hormone-releasing hormone agonist (LHRHa). The patient developed severe pain, which caused significant disability in everyday life. The increase of PSA along with the imaging studies confirmed progressive osseous metastatic disease. A Radium-223 dichloride therapy was applied.

Case 2

A 62-year-old man, with Gleason score 10 (5+5) and T3bN1M1b, presented with strong low back pain and weakness in his left leg, rapidly progressing to disabling pain. Imaging studies revealed locally advanced tumor, enlarged pelvic lymph nodes and multiple bone metastases. The patient was treated with LHRHa, Bicalutamide and radiosurgery. He underwent urgent transurethral resection of the prostate. Radiological and biochemical progression was observed with no evidence of local recurrence, lymphogenic and visceral targets. The patient was planned for treatment with Xofigo.

Results: Dramatic pain reduction and improved quality of life was observed in case 1.

Discontinuation of the Xofigo therapy followed in case 2 due to laboratory evidence of myelotoxicity.

Conclusion: One of the many challenges regarding radium-223 is an understanding of how best to optimize and integrate this novel therapy into the overall treatment paradigm and this will be a tremendous challenge going forward.

Key words: mCRPC, Radium-223 dichloride, bone metastases.

Teodor Sofiyanski studied medicine at the Medical University Sofia, Bulgaria. During his studies he has always been interested in sonography. After graduation he took 1 year training in Germany, where he showed interest in the diagnosis and follow-up of oncological patients. He is currently a resident at the Nuclear Medicine

Department of Sofia Cancer Center. He participated in an advanced course on Management of the Thyroid Cancer by EANM (European Association of Nuclear Medicine). His interests are related to thyroid cancer, breast cancer as well as prostate cancer.

He speaks German, English and Spanish.

Dr. Elvira Stoyanova

Urothelial cancer – prolongation of survival in the metastatic setting

Elvira Stoyanova, Iveta Boranova, Petko Dochev, Detelina Valcheva, Ivan Kazmukov, Olga Karazhova, Petya Tuschieva, Assia Konsoulova

Currently, the systemic chemotherapy with platinum-based doublets or triplets is the standard of care in metastatic urothelial cancer regardless of predictive biomarkers. In case of significant PD-L1 expression and contraindications to systemic chemotherapy, immune checkpoint inhibition remains an alternative strategy even in first line. Logically, the combination strategy with initial chemotherapy and in cases of response – maintenance with immunotherapy has led to a shift in the management of metastatic urothelial cancer as this initial sequention proved to extend survival. We present a case report of a patient with complete response after systemic platinum-based chemotherapy as first line treatment and maintenance IO with avelumab.

Dr. Ralitza Murdjeva

Ibrance/Palbociclib - Treatment for HR+/HER2- Metastatic Breast Cancer

Ibrance is not a traditional chemotherapy. It is a targeted therapy known as a CDK 4/6 inhibitor. When Ibrance is taken in combination with certain hormonal therapies, it helps slow the progression of cancer.

Ibrance is for HR+/HER2- metastatic breast cancer (mBC), which is the most common subtype of metastatic breast cancer, representing 60% of all cases.

Hormone receptor positive (HR+) includes both estrogen receptor positive (ER+) and/or progesterone receptor positive (PR+) subtypes.

In HR+, HER2- mBC, the increase of certain proteins, such as CDK4 and CDK6, can contribute to the cell being overactive, which can cause the cell to lose its ability to regulate its growth and division. This can lead to the production of many cancerous cells. Ibrance works inside the cell to disrupt the activity of the proteins CDK4 and CDK6, which can keep both healthy and cancer cells from dividing.

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. Albena Fakirova

Dr. Albena Fakirova has been working for 11 years as a pathologist in the Department of Clinical Pathology - Military Medical Academy (MMA) in Sofia, as well as in the Department of Clinical Pathology in Tokuda Hospital since 2011. She has got a specialty in General and Clinical Pathology since 2008 and has over 17 years of experience in this field. Dr. Fakirova has also worked as a pathologist for 10 years at Pirogov Emergency Institute (1998-2008), in the National Center for Cardiovascular Diseases in Sofia (1997-1998), in the Emergency Room at Tota Venkova Hospital in Gabrovo, and as a research assistant at the Institute of Plant Physiology of BAS.

She is known for having successfully introduced innovative methods in the clinical practice and is a preferred pathologist and cytopathologist both for colleagues in and out of the Military Medical Academy.

Dr. Albena Fakirova has specialized in various clinical pathology clinics in Italy, Denmark, Austria, Romania, and Germany. She takes interest in a wide range of general and clinical pathology, as well as a special interest in biliary and pancreatic pathology, pulmonary and breast diseases. She is an active participant in the work of the MMA Oncology Committee. She has numerous collaborations with clinicians in various scientific forums as well as publications in scientific periodicals in the country and abroad.

Dr. Fakirova is a member of the Bulgarian Society of Pathology and the European Society of Pathology. She is fluent in English and Russian.

Dr. Bozhidar Iliev

Dr. Bozhidar Iliev was born on September 10, 1986 in The Town of Bozhidar Iliev. 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.

Dr. Simona Volovat

Anthracyclines in the Treatment of Breast Cancer - When, Where, Why

Presenter: Simona Volovat, MD, PhD

Regional Institute of Oncology Iasi, Romania

Anthracyclines have been regularly incorporated in adjuvant breast cancer therapy for decades, as extensive data supported their value in improving DFS and OS. However, their use has been questioned, taking into account both the toxicities, the efficacy of taxane-based nonanthracycline adjuvant chemotherapy, and the relatively small benefit. Recently, the ABC, WSG PlanB, and MINDACT randomized trials provided high-quality randomized data regarding the direct comparison of nonanthracycline taxane-based and anthracycline- and taxane-based adjuvant chemotherapy regimens in HER2-negative breast cancer. Despite different study results, the magnitude of benefit of adjuvant anthracyclines compared with a taxane regimen is small and their use can be mostly considered in patients with triple-negative tumors or extensive lymph node involvement. Longer-term follow-up as well as confirmatory subgroup data, concerning the higher and lower risk may help determine which patients mostly benefit from adjuvant anthracycline therapy. Future studies' randomized trials may evaluate other alternatives to an anthracycline regimen such as a platinum-based nonanthracycline therapy for triple-negative breast cancer, which has shown promising pCR rates as neoadjuvant therapy, as well as incorporating more biologically targeted therapies for those with the high-risk disease - a PARP inhibitor, olaparib and adjuvant CDK4/6.

Dr. Simona Volovat has graduated the University of Medicine and Pharmacy "Gr T Popa" in 2009 and got her PhD degree there as well, her main field of study being the colorectal cancer.

She has been working the University of Medicine and Pharmacy "Gr T Popa" first as a resident doctor in the period 2010-2015, then as an Assistant Professor (2014-2022) and as a lecturer since February this year.

Dr. Volovat has also experience serving as a resident doctor in Institutul Curie - Hopital Rene Huguenin (2011-2012), and working as a Medical Oncologist in the Breast Unit in Champalimaud Clinical Center in Lisbon (2017-2018), and in the Regional Institute of Oncology in Lasi, Romania, since 2016.

For the last 15 years, Dr. Simona Volovat has specialized in various clinical centres and has attended a number of conferences and seminars in France, UK, Switzerland, Belgium, Germany, and Romania.

Dr. Volovat has participated as a sub- and co-investigator in 20 clinical trials and is a distinguished author of 40 research articles and 14 book chapters. Apart from her mother tongue – Romanian, she is also fluent in English, French, Portuguese, and German.

Prof. Christoph C. Zielinski

Immunotherapy of Breast Cancer

Christoph Zielinski

Central European Cooperative Oncology Group

Therapy of malignancies with immune checkpoint inhibitors (ICPIs) has achieved impressive results in the treatment of up to 20 malignancies. The use of ICPIs in breast cancer has been limping behind for a prolonged time, as the recognition of tumour cells as "foreign" has been not sufficiently understood for a long time. Thus, the amelioration of our understanding of tumour cells as "foreign" has been the topic of many investigations and attempts to generate biomarkers. The results from the latter investigations have shown that triple negative breast cancer (TNBC) with its abundance of molecular mutations resulting in in the presentation of many neoantigens would represent an optimal model for the study of ICPIs in breast cancer.

The Keynote (KN) 086 phase II trial using Pembrolizumab showed that patients with advanced TNBC would benefit from this ICPI if they have not been pretreated for advanced disease, whereas its late use regarding treatment lines would not be efficacious. In advanced TNBC, two studies – the IMPassion 130 and KN 355 trials – have shown an advantage of the use of either nab-Paclitaxel plus Atezolizumab (Impassion 130 trial) regarding overall survival or of a series of chemotherapeutic options plus Pembrolizumab (KN 355 trial)

regarding progression free survival. Interestingly, the IMpassion 130 trial of Paclitaxel plus Atezolizumab did not show an advantage over Paclitaxel alone.

These results obtained in advanced TNBC were translated into the neoadjuvant setting including the Impassion 031 trial which included Atezolizumab plus nab-Paclitaxel or the KN522 trial which included Pembrolizumab plus Paclitaxel and Carboplatin which both resulted in a significant amelioration in the percentages of complete remissions, as compared with chemotherapy alone.

Thus, the use of ICPIs in TNBC – in either the advanced or neoadjuvant setting – has become state-of-the art, although the chemotherapeutic compounds used in parallel with the respective ICPI should be used according to outcomes of available clinical studies.

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), 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).

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

Dr. Aleksandar Gerasimov

Erleada in Metastatic Hormone Sensitive Prostate Cancer

Androgen deprivation therapy (ADT) is the backbone of therapy for advanced prostate cancer patients who have failed primary interventional therapy. Most of mechanisms, neoplastic cellular progression, and proliferation which subsequently leads to PSA relapse. Castration-resistant prostate cancer (CRPC), a rising PSA with castrate levels of testosterone alongside no radiographic imaging findings with conventional imaging (CT/ Bone scans) are designated as non-metastatic (nmCRPC).The metastatic castration-resistant prostate cancer (mCRPC) patient population evolves from patients initially diagnosed metastatic hormone-sensitive prostate cancer (mHSPC), yet this same group of patients represents a disproportionally higher contribution the percentage of mCRPC patients 1 Progression from mHSPC to mCRPC could take less than 1 year. 2 Once patients progress to mCRPC, the prognosis becomes poor.3

This presentation demonstrates that in final analysis of TITAN study and its long-term results apalutamide plus ADT consistently provides significant improvements in OS and delays onset of progression despite a large number of placebo-treated crossing over to active treatment with apalutamide during study. Apalutamide benefit was robustly supported by other efficacy end points, including delayed castration resistance and prolonged PFS2. Apalutamide maintained HRQoL and had an acceptable safety profile confirmed with substantially longer follow-up and exposure. These results support the early addition of apalutamide to ADT for optimal therapeutic outcomes in patients with mHSPC. 4

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Aleksandar Gerasimov was born in 1987 in Vratsa. He graduated the Medical University in 2012 with honors. He started working in the Clinic of Medical Oncology at the University Hospital for Active Treatment in Oncology, Sofia in 2012 as a scientific assistant. Dr. Gerasimov started his post-graduate study in Medical oncology in 2013. His scientific interests are in the fields of prostate cancer, breast cancer, neuroendocrine tumors. He specialized NET in Uppsala, Sweden in 2014 and Jerusalem, Israel in 2017. He did an internship in Breast cancer center of excellence in Instituto Europeo di Oncologia, Milan, Italy in 2016. Dr. Gerasimov is preparing dissertation for PHD in the fields of prostate and breast cancer.

Dr. Kiril Zhelev

Kiril Zhelev MD was born in Sliven.

He graduated Medicine in 2016 at the Medical University of Varna.

From 2017 to 2019 he worked at UMHAT St. Marina, Varna, Department of Radiotherapy.

Since 2019 he works at MHAT Uni Hospital, Panagyurishte, Department of Radiotherapy.

Kiril Zhelev has internationally recognized scientific developments and participations of ESTRO 2021 and 2022, ESMO 2020 and 2021, ESMO World GI 2021.

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 attended a number of specialized training courses in Austria, Germany, England and Israel. As a member of BAMO, BADO, BOND she often participates as a lecturer in national and international oncology forums. Her greatest passion and focus lies with immuno-oncology, melanoma and breast cancer and contributes with scientific publications on the topic.

Prof. Sonya Sergieva

SLN Lymphoscintigraphy with Subsequent SPECT/CT Imaging in Malignant Melanoma

Professor Sonya Sergieva

Department of Nuclear Medicine

Sofia Cancer Center

Lymphoscintigraphic imaging of SLN with subsequent intraoperative y-detection and biopsy is an established standard in clinical practice for N-status of early stages in breast carcinoma and malignant melanoma.

This method was first introduced in 1992 year from Morton et al., which reported their first results from the intraoperative biopsy of blue-dye colored SLN, in 223 patients with melanoma as minimally invasive alternative operating techniques for N-staging and detection of clinical occult nodal metastases.

Correct determination of the number and exact location of SLN is a key moment in the correct N-staging of malignant melanoma and diagnosis of occult lymphogeneous metastases. The criteria for carrying out SNL biopsy are regulated on the basis of histopathological characteristics of the melanoma lesion, the thickness of the primary tumor, the presence of surface ulceration, high mitotic index> 1/mm2, intralymphatic (transit or satellite) embolism. Over the last 10 years the importance of SPECT-CT imaging and exact location of SLN is intensively investigated. According to literary data, this new technology improves the sensitivity of conventional lymphoscintography, which ranges between 72 and 94% to 89-100% due to better resolution and contrast detection.

Identification of SLN in volume body structures, e.g. in melanoma, localized in the field of torax, head and neck, sometimes leads to atypical lymph drainage and topography of regional groups of lymph nodes that are not SLN but are subject to follow-up.

SPECT-CT studies increase the diagnostic accuracy of lymphoscintigraphy topography by visualizing the number and the exact location of the deeper SLNs, which is essential to determine the therapeutic behavior and to perform a selective SLN biopsy.

The multidisciplinary approach to SNL biopsy is a procedure that includes close cooperation between nuclear medics, surgeons and pathologists for the exact predictive and intraoperative localization of SNL and the subsequent histopathological study.

Prof. Sonya Borisova Sergieva is a nuclear medicine specialist who works in Sofia City Oncology Dispensary and as of 2013 is an Associate Professor at the Specialized Hospital for Treating Oncology Diseases in Sofia.

Dr. Sergieva graduated the Medical Academy in Sofia in 1990 and specialized Nuclear Medicine in the National Oncology Center and Alexandrovska Hospital in Sofia in the period 1991-1994. After getting her nuclear medicine diploma in 1994, she moved on specializing in oncology and finished her second specialization in 1998.

Dr. Sonya Sergieva started her career in the National Oncology Centre in Sofia where she worked from 1991 till 2002. Later on, she moved to the Department of Nuclear Medicine in Sofia City Oncology Dispensary, which she headed for 10 years from 2003 till 2012.

Dr. Paolo Castellucci

PET/CT imaging of Malignant Melanoma response to immunotherapy - RECIST and PERCIST criteria. Progression and Pseudoprogression

PET/CT with FDG is frequently used to detect hypermetabolic cancer cells. Studies have shown the high accuracy of FDGPET/ CT in diagnosing active Malignant Melanoma (MM), with sensitivity and specificity ranging from 85% to 90% respectively.

Recently, immune checkpoint inhibitors have transformed the landscape of melanoma treatment and achieved impressive results. Immunotherapy has revolutionized the treatment of advanced or metastatic melanoma, so that, according to NCCN and ESMO guidelines, immune checkpoint blockade is considered as a first-line treatment option for unresectable stage III and IV melanoma patients.

PET/CT with FDG for monitoring the response to immunotherapy may underestimate the response to treatment. Although FDG uptake should reflect an increased glucose consumption by cancer cell populations and their viability, it could also be referred to multiple other factors, like increased metabolic activity of stromal and immune cells.

Any method able to avoid misdiagnosis in the reading of FDG PET/CT would be very welcome by clinicians. In the talk different methods of FDG PET/CT reading in patients with metastatic melanoma treated with immunotherapy will be discussed.

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 specializzaizone 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.

Dr. Rossitza Krasteva

Drug pathway in Medical Oncology

V. Grigorova , R. Krasteva

As part of multidisciplinary team clinical pharmacist has major role in assuring safe, effective and cost-effective drug therapy. The role of the oncology clinical pharmacist is mainly to identify, prevent and manage any drug related problem including drug choice, dosage, interactions, administration and side effects. Since it requires specialized knowledge oncology pharmacy has become a new pharmaceutical discipline with its own curriculum. They also can participate as an investigator on numerous clinical trials involving medication use in care of patients with cancer. Current literature shows that oncology clinical pharmacist was very effective in optimizing medication use and has a promising role through providing clinically important interventions regarding medication use

An enrollment of clinical pharmacist in an oncology hospital or in oncology settings can work as a bridge between medical oncologist and patients.

Dr. Zahari Zahariev

Dr. Zahari Zahariev was born on June 20, 1968 in the town of Montana. He graduated the Montana German Language School in 1987, and the Medical Faculty of the Medical University - Sofia in 1995. He started working as an assistant at the Clinic of Radiation Therapy, University Hospital "Queen Joanna" - ISUL, Sofia in 1996. Dr. Zahariev got ae specialty in Radiotherapy in 2001, and a specialty in Oncology in 2005.

The professional experience of Dr. Zahariev also includes working as an expert in the development and organization of radiotherapy at the Ministry of Health in Bulgaria. He has also been a consultant for head and neck tumors, and dermatologic tumors at the Oncology Committee of Queen Joanna Hospital - ISUL, Sofia, as well as a consultant in the oncology committees at Alexandrovska Hospital, Doverie Hospital, Hill Clinic and other hospitals in Bulgaria. Dr. Zahari Zahariev is the Editor-in-Chief of the National Standards for Radiation Therapy of Head and Neck Tumors.

Currently, Dr. Zahariev serves as the head of the Radiation Department at the Oncology Center of Uni Hospital, Panagyurishte.

The scientific interests of Dr. Zahariev are in the following fields:

- Head and neck tumors: unconventional and hypo-fractionation, accelerated radiotherapy.
- Combined chemo-radiotherapy in organ-preserving treatment or advanced tumors.
- Breast cancer: unconventional fractionation. Radiation therapy after organ-sparing surgery, mastectomy after breast implant placement.
- Rectal carcinomas: pre- and postoperative chemo-radiotherapy.
- Radiation therapy of benign and rare tumors.

Dr. Zahariev is a member of the Guild of Radiation Therapists in Bulgaria, the Bulgarian Association of Medical Oncology (BAMO), the European Society of Medical Oncology (ESMO), and the European Society for Radiotherapy and Oncology (ESTRO).

Dr. Assia Konsoulova

Dr. 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 working as a senior medical oncologist at the Medical Oncology Department at Complex Oncological Center - Burgas.

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-Darzalas 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 Society of the Young oncologists in 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).

Dr. 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).

Prof Yu XU M.D. Ph.D.

Epidemiology of Malignant Melanoma in China

Associate Professor, Department of Musculoskeletal Oncology, Fudan University Shanghai Cancer Center, China

General Secretary, Melanoma Center, Fudan University Shanghai Cancer Center, China

General Secretary, Society of Melanoma, Shanghai Anti-Cancer Association

General Secretary, Society of Sarcoma, Shanghai Anti-Cancer Association

Member, Society of Melanoma, Chinese Society of Clinical Oncology

Member, Society of Sarcoma, Chinese Anti-Cancer Association

Prof Xu graduated from Shanghai Medical Collage, Fudan University in 2007 and received Doctor Degree in 2016. He visited M.D. Anderson Cancer Center as scholarship fellow in 2011. He is qualified as associate professor in surgical oncology in 2019. Now he majors in surgery and comprehensive treatment of melanoma, sarcoma, and other skin cancer.

He annually performs over 300 operations. He has nearly 10 years' clinical experience in chemotherapy, targeted and immunotherapy.

He has published over 20 peer-reviewed papers and investigates in translational studies on melanoma in preclinical and clinical research programs. He also participates as sub-PI in multiple clinical trial on melanoma and sarcoma.

Dr. Tsvetan Trichkov

Surgical Approach and Importance of Neoadjuvant Therapy in Borderline Resectable and Locally Advanced Pancreatic Head Carcinoma

Trichkov Ts., Mihaylov V., Vladov N.

HPB and Transplant Surgery Department, Military Medical Academy – Sofia, Bulgaria

Introduction

In recent decades, pancreatic ductal adenocarcinoma (PDAC) has been established as the worst-progressed cancer of the gastrointestinal tract. It accounts for about 90% of malignancies of the pancreas, with a 5-year survival of only 7-8%. PDAC is the fourth deadliest cancer in developed countries and is expected to be in second place by 2030. Nowadays, the only way to definitively treat this disease is radical resection of the pancreas. However, only between 15 and 20% of patients are initially eligible for surgery. Because more than 50% of patients at the time of diagnosis have distant metastases, and in about 35%, the tumor is locally advanced. The development of neoadjuvant and adjuvant therapeutic approaches has given a new direction in treating previously considered inoperable tumors.

Aim

The main objective was to compare the survival, complications, and significant risk factors in patients operated for pancreatic head carcinoma who underwent venous resection and reconstruction.

Materials and Methods

This single-center retrospective study aimed to evaluate the clinical, surgical, and pathoanatomical features of 594 patients who underwent radical surgery for pancreatic head carcinoma between September 2004 and December 2021. The series includes 113 patients (19.02%) with venous resections for borderline resectable pancreatic adenocarcinoma. A p-value less than 0.05 is considered significant. Mantel-Cox, Breslow, Tarone-Ware analyses, confidence interval (95% CI), $\chi 2$-test, standard deviation (SD), and t-statistics were used to compare the data.

Results

The estimated median survival rates were significant, with 19.3 months in pancreaticoduodenal vascular resections (PDVR) and 26.9 months in pancreaticoduodenal resections (PDR), respectively ($p=0.047$). On the other hand, one, three, and five-year survival rates of 46.6%, 17.6%, 8.3% in PDVR, 53.6% and 20.8%, and 14.9% in PDR were not statistically significant ($p=0.13$, 0.50 and 0.11 respectively). Survival rates comparison in PDR, PDVR, and palliative procedures (PP) between the three groups showed statistical significance ($p<0.05$). The clinically relevant postoperative complications - 17.1% in vascular resections versus 15.9% in PDR - were not statistically significant ($p=0.75$). There is absolute significance for perioperative 30-day mortality. In PDVR group it is 11.1%, while in standard procedures – 3.7% ($p = 0.0013$). Intra- or postoperative blood transfusion was required in 44.3% of vascular resections, while only 19.8% of PDR underwent blood transfusion ($p <0.0001$). Venous resections are characterized by a higher percentage of G3 carcinomas ($p = 0.005$) and a more frequent achievement of R0-resection ($p = 0.018$) compared to PDR. Postoperative bleeding and re-operation ($p<0.05$) are independent prognostic factors for a worse prognosis. There was no significant relationship between survival and the presence of vascular invasion ($p=0.581$). We report a tiny number of patients with neoadjuvant chemotherapy (n=11, seven by vascular resections – 6.19%), based on which statistical analysis and correlation cannot be performed.

Conclusion

Compared to standard procedures, venous resections have a lower monthly survival rate but are significantly higher than patients who have undergone palliative interventions. On the other hand, there is no statistical significance for both groups at 1-, 3-, and 5-year survival. This also applies to the rate of major postoperative complications and vascular invasion survival. In the last years, neoadjuvant chemotherapy is becoming increasingly widespread and vital in treating borderline resectable and locally-advanced pancreatic tumors. When experienced surgeons perform at specialized high-volume centres, pancreaticoduodenal resections combined with venous resection and reconstruction are reliable and safe surgical procedures.

Keywords: pancreatic adenocarcinoma, pancreaticoduodenal resection, venous resection, neoadjuvant chemotherapy.

Dr. Tsvetan Trichkov started his medical education in Charité Berlin in 2007. In 2008, he transferred to the Medical University of Plovdiv, Bulgaria, graduating in medicine in 2013. He worked briefly in the surgical department at the Pazardzhik Hospital (Bulgaria) in the same year. From the beginning of 2014, he transferred to the HPB and Transplant Surgery Department of the Military Medical Academy in Sofia, where he began specialization. In 2019 he acquired specialization in surgery, and since 2020 he has been a consultant at the same clinic. This year won the competition for the Ph.D. "Vascular resections for carcinoma in the head of the pancreas." He works in HPB, gastrointestinal, liver transplant, laparoscopic, and emergency surgery.

Dr. Kristina Petkova

Use of Eribulin in Combination with Trastuzumab in HER2 + Breast Cancer - Clinical Experience and International Studies

Approximately 20–30% of breast cancer tumors overexpress or amplify human epidermal growth factor receptor 2 (HER2). The role of this receptor in the progression of HER2+ breast cancer and resistance to certain anticancer monotherapies was investigated. Therefore, the prognosis associated with HER2-positive breast cancer is usually poor.

However, during the last two decades, the treatment and outcomes for patients with HER2+ disease have shifted dramatically. Anti-HER2 therapy should be offered early to all patients with HER2+ advanced breast cancer, except in the presence of contra-indications. For later lines of therapy, trastuzumab can be administered with several agents. A recently published article presented the experience of 19 Russian medical institutions on the use of eribulin in combination with trastuzumab in various treatment lines of metastatic HER2+ breast cancer in routine clinical practice. The median PFS in all patients with HER2+ advanced breast cancer was 5 months. The treatment was well tolerated. In the subgroup of luminal HER2+ ABC, the observed ORR was bigger (30.8% vs. 8.8%) and the median PFS was longer (6.4 months vs. 4.4 months) than in non-luminal phenotype.

Although eribulin and trastuzumab are not generally used in HER2+ ABC in the last few years, experience with this combination are reported from many studies.

Dr. Kristina Petkova graduated Medical University in Sofia with excellent degree. She specializes Medical Oncology in MHAT „St. Sofia" since 2021. As a student she worked as a volunteer in different oncology centers and was also a member of Association of Medical Students in Bulgaria. Dr. Petkova has interests in gynecological cancers and also publications in other topics like bladder cancer, RCC and skin toxicities induced by Epidermal growth factor receptor (EGFR) inhibitors. She is a member of Young Oncologist club Bulgaria, with multiple participations in the poster sessions. She has experience as investigator and study coordinator in different clinical studies. Dr. Petkova is enthusiastic medical professional eager to contribute to team success through hard work, attention to detail and excellent organizational skills.

Notes

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