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PRELIMINARY ANALYSIS OF PROGRESSION-FREE SURVIVAL RESULTS FOR ATEZOLIZUMAB PLUS PLATINUM ETOPOSIDE AS FIRST-LINE TREATMENT IN METASTATIC LUNG LARGE-CELL NEUROENDOCRINE CARCINOMA (LCNEC) PATIENTS

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Introduction: Large cell neuroendocrine carcinoma (LCNEC) is an extremely rare and aggressive type of cancer with poor prognosis. Most patients are diagnosed at an advanced or metastatic stage, and there are no specific therapies available for this disease. Despite the emergence of immunotherapy as a critical component of cancer treatment for many types of cancers, its efficacy in treating LCNEC remains unclear.

Aim: To assess the effectiveness of atezolizumab in combination with chemotherapy for treating metastatic LCNEC.

Methods: The LANCE study is an open-label, non-randomized study designed to evaluate the efficacy of atezolizumab in combination with platinum etoposide as first-line treatment for patients with metastatic LCNEC. The study was conducted at the 3rd Department of Medicine, Sotiria Chest Disease Hospital in Athens, Greece, and 22 patients were enrolled. All participants were confirmed to have lung LCNEC by histological examination. However, five of the 22 patients were excluded from the study because of previous systemic treatment because of the limited initial stage of diagnosis. Owing to the limited number of events and small sample size in the interim analysis of the trial, we adopted the bootstrapping method for statistical validation.

Results: This preliminary analysis was conducted one year after the initiation of the trial, providing an early insight into the progression-free survival outcomes. 58.8% of the patients (10 of 17) were treated with a combination of Atezolizumab, Platinum, and Etoposide (APE), while the remaining 41.2% (7 of 17) received Platinum and Etoposide (PE) alone. Kaplan-Meier analysis for progression-free survival (PFS) revealed a median PFS values of 6.6 months for the combination therapy group compared to 6.3 months for the PE monotherapy group, with a p-value of 0.83, indicating no significant difference. Within the APE group, five patients exhibited an ongoing response to atezolizumab at the time of the interim data cutoff, whereas one patient in the control group was still alive. The analysis also showed no significant correlation between TP53 and RB1 immunohistochemistry (IHC) expression and either overall survival (OS) or PFS in either treatment group.

Conclusions: In the preliminary analysis, our investigation into the efficacy of Atezolizumab combined with Platinum Etoposide as a first-line treatment for metastatic Lung Large-Cell Neuroendocrine Carcinoma (LCNEC) patients provides important insights, yet reveals a complex therapeutic landscape. Despite the high hopes placed on immunotherapy, our study indicates that the addition of Atezolizumab to Platinum Etoposide does not significantly improve progression-free survival (PFS) compared to the standard Platinum and Etoposide (PE) therapy, with median PFS values of 6.6 months for the combination therapy versus 6.3 months for the monotherapy group.

USE OF NEXT-GENERATION SEQUENCING IN PATIENTS WITH NON-SMALL CELL LUNG CANCER WITH KRAS MUTATION

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Introduction: The application of next-generation sequencing (NGS) in patients with non-small cell lung cancer (NSCLC) has allowed the effective use of biopsy material for the detection of driver mutations, in order to make therapeutic decisions for the use of immunotherapy or targeted therapies. Literature data on the use of NGS in patients with *KRAS* mutations is limited.

Aim: To record and analyze the characteristics of NSCLC patients with *KRAS* mutation diagnosed by NGS.

Methods: A retrospective review of files of patients with NSCLC treated in the Oncology Unit of the Third Department of Internal Medicine in Sotiria General Hospital was performed. The clinicopathological characteristics of the patients were assessed using descriptive statistics.

Results: 23 patients were included in the case series. The average age at lung cancer diagnosis was 62 years (range 42-78 years). 90.5% and 9.5% were smokers and non-smokers respectively. 16 patients (69.6%) had metastatic disease at the time of lung cancer diagnosis. The histological type was adenocarcinoma in 22 patients (95.7%) and adenosquamous carcinoma in 1 patient (4.3%). The *KRAS* mutations detected were G12C (52.2%), G12V (26.1%), G12D (13.0%), G12S (4.3%) and G13C (4.3%). Co-existing physical genetic alterations in genes different from KRAS with potential predictive or prognostic significance were detected in 16 patients (69.6%). The most frequent alterations were detected in the *MET* and *TP53* genes, with a frequency of 17.4% for both genes. After a median follow-up of 14.6 months (range 0.7-40.6 months), the median progression-free interval was 13.6 months (95% confidence interval: 7.1 months-not reached) and the median survival was not reached.

Conclusions: The clinicopathological characteristics of the patients were similar to those reported in the international literature. In the majority of patients with *KRAS* mutations included in this case series, the use of NGS allowed the detection of additional gene alterations with potential predictive or prognostic significance.

CORRELATION OF MOLECULAR PROFILE AND CIRCULATING TUMOR DNA WITH STAGE III COLORECTAL CANCER PATIENTS OUTCOME, RECEIVING ADJUVANT CHEMOTHERAPY. INSIGHTS FROM THE IDEA INTERNATIONAL STUDY

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Introduction: Colorectal cancer (CLC) is the third most common cancer type, worldwide and a common cause of mortality from solid tumors. Based on its increasing incidence, treatment toxicity, cost and the limited health systems resources, the international IDEA study was designed to evaluate the non-inferiority hypothesis of 3-month versus 6-month adjuvant chemotherapy with FOLFOX or CAPOX.

Aim: The main aim of the study was to investigate the molecular profile in the tissue and the ctDNA in the plasma of the patients, and their correlation with the clinical-pathological characteristics and their outcome.

Methods: In the present study, consecutive blood samples and paraffin-embedded surgical specimens of tumor and healthy tissue from 237 patients were collected and analyzed by Whole Exome Sequencing.

Results: A total of 59 mutated genes belonging to 10 different signaling pathways were identified in all patients. Patients had an average of 8 mutated genes (range, 2-21). Mutations in APC2, AKT1, ARAF, BAD, MAPK10, RAC3, RHOA, TGFB2 and TGFB3 genes were found to be associated with worse prognosis ($p=0.002$; $p=0.039$; $p=0.001$; $p=0.001$; $p=0.036$; $p< 0.001$; $p=0.001$; $p=0.009$; $p=0.040$ and $p=0.003$, respectively). Mutations in ARAF ($p=0.027$), MAPK10 ($p<0.001$) and RAC3 ($p=0.029$), RHOA ($p=0.006$) genes emerged as independent predictors for reduced disease-free (DFS) and overall survival (OS), respectively. Conversely, patients with MSH6 gene mutations had a statistically longer OS ($p=0.041$). Finally, the location of the tumor in the right colon is presented as an independent prognostic factor for reduced DFS ($p=0.019$) and OS ($p=0.043$), while for the first time the role of ARAF and MAPK10 mutations as independent prognostic factors for reduced DFS is highlighted ($p=0.027$ and $p<0.001$, respectively). Patients with detectable ctDNA before adjuvant chemotherapy initiation, show a significantly reduced time to relapse ($p<0.001$). Finally, patients with residual disease who receive a three-month regimen of adjuvant chemotherapy show a non-statistically significant trend towards shorter DFS.

Conclusions: The molecular characterization of cancer cells can contribute to a better understanding of the biological course of the disease. The results of the study indicate the promising role of mutations as prognostic biomarkers. As personalized medicine is now the main mode of treatment, knowledge of patients' molecular profile can lead to better treatment options and personalized and improved care, reducing treatment toxicity, patient costs and burden on health systems.

THE IMPORTANCE OF GENETIC TESTING IN PATIENTS WITH COLON CANCER

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Introduction: Hereditary colon cancer account for approximately 2-5% of the total cases and is linked to the existence of inherited variants in specific genes that are related with syndromes (Lynch syndrome, familial adenomatous polyposis, MUTYH-associated polyposis, syndrome Peutz-Jeghers, juvenile polyposis and hamartoma Cowden/PTEN syndrome). Today, Next Generation Sequencing (NGS) technology has contributed to the analysis of many genes and is used in clinical practice.

Aim: The aim of our study is to highlight the importance of genetic testing of patients with colon cancer.

Methods: In total 123 patients with colon cancer genetic testing were performed, analyzing 52 genes using NGS.

Results: 25% (31/123) of the patients carried a pathogenic/likely pathogenic variants (PVs/LPVs). PVs/LPVs detected in the following genes: *APC* (3%), *ATM* (7%), *BARD1* (3%), *BRCA1* (3%), *CHEK2* (10%), *MLH1* (19%), *MSH2* (13%), *MSH3* (3%), *MSH6* (3%), *MUTYH* (10%), *NTLH1* (3%), *PMS2* (13%), *RAD50* (7%) and *RAD51C* (3%). 19.4% (6/31) of pathogenic/potentially pathogenic variants represented Copy Number Variations (CNVs).

Conclusions: Our results show that genetic analysis in cancer patients of the colon is essential and should include full sequencing and analysis of CNVs under gene analysis as it contributes to its decisions medical management of patients.

BREAKING BAD NEWS DURING THE COVID-19 PANDEMIC

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Introduction: The COVID-19 pandemic and the consequent social distancing measures imposed have caused radical changes in the forms of communication, in the context of clinical practice and especially in cases of communicating bad news about the course of the disease and the patient's life, in which non-verbal communication is required, building relationships of trust and empathy between doctor and patient, factors that are not favored by remote communication.

Aim: The Aim of this review was to extend the existing literature by reviewing international research on communication between oncologists and oncology patients and breaking bad news to oncology patients during the COVID-19 pandemic.

Methods: In accordance with PRISMA guidelines, a systematic review of the literature was performed by searching PubMed, Scopus, and EMBASE bibliographic databases from the beginning of the COVID-19 pandemic up to October 10, 2022. The search was limited to articles in the English language. Two reviewers completed the selection of included articles based on titles, abstracts and full text review.

Results: A total of five studies were considered eligible based on study purpose. A critical synthesis of the data was performed. Of the five articles, three addressed the breaking of bad news to patients by medical oncologists during the COVID-19 pandemic, while the remaining two addressed the breaking of bad news to patients by surgeons during the pandemic.

Conclusions: The challenges faced by the oncologist in how to communicate bad news to oncology patients are highlighted in this systematic review and the need for physician preparation prior to patient communication is emphasized. During the COVID-19 pandemic, new practices have been established, such as physician communication with patients and their relatives remotely, by phone or video calls. Due to the inevitable use of new digital media in daily clinical practice, new studies are needed on the effects of remote communication, both on health professionals and patients, as well as studies that will investigate the perceptions of doctors and patients in Greece.

Keywords: Breaking bad news, COVID-19 pandemic, communication, oncology, telemedicine.

IMPACT OF THE COVID-19 PANDEMIC ON YOUNG ONCOLOGISTS

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Introduction: The COVID-19 pandemic brought significant changes in the clinical practice of medicine, especially during the initial waves.

Aim: The aim of the study is to capture the impact of the COVID-19 pandemic on the daily lives of young oncologists registered as HeGYO members using an electronic questionnaire.

Methods: The Hellenic Group of Young Oncologists (HeGYO) formed a questionnaire of 44 questions to reflect the changes brought by the COVID-19 pandemic to young oncologists based on similar questionnaires issued from the European Society of Medical Oncologists (ESMO).

Results: During the period from 15 December 2021 to 15 July 2022, 77 participants completed the online questionnaires, of which 50 (65%) were women. 67 (87%) were under the age of 40 and the 59 (77%) stayed in Athens and Thessaloniki. Most of them worked in a public hospital (74%) in the specialty of Medical Oncology (88%). 49 (64%) were interns and the remaining specialists. 73% of the participants took up new duties during the pandemic, while 67% said that their working day has not returned to the pre-pandemic situation. More than 70% provided distance counseling, while 69% said overtime hours were increased. 79% told that they had access to adequate protective equipment. 80% believe the pandemic had a negative impact on education, while 47% report a potential negative impact on professional careers. The family and friendly environment offered support to most of the respondents (84%). Unfortunately, 49% feel that their contribution to the pandemic was not recognized to the proper extent.

Conclusions: A significant proportion of new oncologists had to take on new tasks during the pandemic to help tackle COVID-19 while overtime duties were increased. The impact of the pandemic was obvious in both the professional and personal spheres, but the social environment offered considerable support.

CLINICAL SIGNIFICANCE OF ONCOLOGY PATIENTS' NUTRITIONAL STATUS ASSESSMENT

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Background: The catabolic activity of cancer combined with various side effects of cancer treatment, lead to decreased food intake, weight loss and muscle wasting, compromising patients' clinical outcome and quality of life. As a result, the incidence of prolonged hospital stays is increasing. Thus, maintaining nutritional balance is critical for health care services.

Methods: A prospective observational study was conducted in the Oncology Department of our hospital. Nutritional status was assessed via the patient generated-subjective global assessment (PG-SGA). The patients participated in the study voluntarily and after signing a consent form.

Results: 136 patients participated in the study with mean age 60 years, mean current body weight 73kg, while 58% were male. During a six-month period, 45 patients (33.1%) had no weight loss, 48 (35.3%) had lost up to 10% of their initial weight and 43 (31.6%) over 10%. 61 patients (44.9%) had decreased their food intake compared to a month ago. According to PS-SGA questionnaire, 57 patients (42%) had score up to 8, while 79 patients (58%) had score 9 or more, which is the limit for initiation of urgent nutrition intervention. Statistical analysis showed that age, chemotherapy, or radiotherapy had no effect in body weight or food consumption change, neither in PG-SGA score ($p>0.05$ in all cases). Gender was related to BW change during the last two weeks, specifically more women had stable weight (54% compared to 32% of the men, $p=0.037$) and more men had reduced weight (45% vs 32% in women). Metastasis had a significant role in the number of patients with PG-SGA, 66% of patients with metastases vs 34% of them without metastases had score ≥9, (OR:3.8, 95% CI: 1.7-8.5, $p=0.0009$).

Conclusions: The results highlight the importance of early assessment of the nutritional status of cancer patients receiving oncology treatment according to patient and disease characteristics. A timely intervention for nutritional support of the patients being at risk for malnutrition and cachexia is crucial.

Characteristics	Results
Number of patients	136
Age	59.93±15.77
Body weight (6 months before)	78.21±17.23
BW now (at the study check point)	72.76±15.35
PG-SGA score	10.41±5.6
Gender male	79(58.09%)
Tumor site	
Upper GI	33(24.26%)
Lower GI	30(22.06%)
Gynecology	28(20.59%)
Thorax	20(14.71%)
Urology	10(7.35%)
Rare	9(6.62%)
Head-Neck	6(4.41%)
Metastasis	101(74.26%)
Chemotherapy	128(94.12%)
Radiotherapy	28(20.59%)
Immunotherapy	12(8.82%)

Characteristics	Results
BW change during the last six months (in 3 scales)	
Loss	91(66.91%)
Same	15(11.03%)
Gain	30(22.06%)
BW change during the last two weeks	
1_Reduced	53(39.26%)
0_Same	56(41.48%)
2_Icreased	26(19.26%)
Food consumption changes the last month	
1_Reduced	61(44.85%)
0_Same	45(33.09%)
2_Increased	30(22.06%)
PG-SGA score with cut off ≥9 (need for food intervention)	
<9	57(41.91%)
≥9	79(58.09%)

Table 1: Characteristics of the study population

	PG-SGA score with cut off ≥9		
	<9	≥9	Total
Upper GI	15 (45.45%)	18 (54.55%)	33
Lower GI	19 (63.33%)	11 (36.67%)	30
Gynecology	15 (53.57%)	13 (46.43%)	28
Thorax	2 (10%)	18 (90%)	20
Urology	3 (30%)	7 (70%)	10
Rare	2 (22.22%)	7 (77.78%)	9
Head-Neck	1 (16.67%)	5 (83.33%)	6
Total	57	79	136

Table 2: PG-SGA score with cut-off 9 in relation to cancer type

REAL WORLD DATA FOR VENOUS THROMBOEMBOLISMS (VTEs) IN PATIENTS WITH ACTIVE CANCER: THROMBOPROPHYLAXIS POOLED ANALYSIS FROM GMAT AND ACT4CAT STUDIES

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Background: Venous ThromboEmbolisms (VTEs) leads to a lot of negative consequences for patients with active cancer and is reported up to 20%. Affects anticancer treatment planning, increases morbidity, mortality, the economic burden and escalates psychological drain. Current guidelines recommend pharmacologic prophylaxis in ambulatory cancer patients with Khorana score ≥2.

Methods: GMaT and ACT4CAT were two prospective observational phase IV studies conducted by HeSMO in Greece. The aim was to record the clinical practice for active cancer ambulatory patients who received thromboprophylaxis and enrolled after signing informed consent. The studies were approved by the bioethics committee.

Results: 1157 patients from 26 oncology clinics received thromboprophylaxis. Tumor types: gastrointestinal 38.5%, lung 24.8%, urological 12.2%, gynecological 6.9%, breast 6.1% and others 11.5%. Treatment lines were: 1st 62.5%, 2nd 15.1%, 3rd 4%, adjuvant 9.7% and neoadjuvant 5.9%.

Age ≥65 found 55.2%, BMI≥30 17.8% and males 59.9%. High-Risk for Thrombosis Agents (HRTAs) received 82.3%, specifically: platinum agents (52.9%), antimetabolites (49.0%) and immunotherapy (10.2%). 52.7% of the anticancer agents had potential drug-drug interactions (DDIs) with Direct Oral Anticoagulants (DOACs). High Thrombotic risk factors presented in the table.

Thromboprophylaxis duration was 5.1±3.3 months: tinzaparin 91.2%, fondaparinux 4.6%, bemiparin 2.3%, enoxaparin1.2%, rivaroxaban 0.4% and apixaban 0.3%. Intermediate thromboprophylaxis dose received 62% of patients; 50% in adjuvant setting & 72.6% in metastatic. 32 thrombotic events reported (efficacy: 97.2%, 95%CI: 96.3-98.2%) and 26 grade 1 or minor bleedings (2.2%, 95%CI:1.4-3.1%). Patients receiving intermediate doses had less risk for thrombosis (p=0.0308).

Conclusions: VTEs prophylaxis in ambulatory active cancer patients was found safe and effective. Apart from the Khorana score, metastasis, HRTAs and DDIs seem to affect clinical decision for thromboprophylaxis mainly with Low Molecular Weight Heparins (LMWHs) and often using intermediate dose irrelevant of clinical setting. Cancer Associated Thrombosis (CAT) is not negligible risk and oncologists appeared to be aware about this making clinical decisions based on patients' characteristics.

Neoplasm primary site	Incidence	Females	Age ≥65	BMI ≥30	Smoker (ex or current)	Metastasis	HRTAs	DDIs	Radiotherapy	Comorbidities
Lung	24.8	21.4	56.5	18.5	88.5	82.5	82.9	58.9	34.3	46.1
Pancreatic	21.5	41.6	54.6	11.2	50.2	75.7	96.4	63.1	3.3	35.8
Urological	12.2	10.3	58.9	19.2	71.6	70.1	72.1	44	19.3	53.2
Colorectal	9.5	39.8	58.2	15.5	50.9	81.3	89.1	27.3	15.6	52.3
Stomach	7.4	29.1	60.5	11.6	62.8	74.1	91.8	40.7	10.5	47.6
Gynecological	6.9	100	55	35	30	71.1	87.3	71.3	5.1	46
Breast	6.1	98.5	37.1	20	31.4	67.7	52.9	61.4	45.5	60.6
Head & neck	1.3	30	33.3	33.3	80	63.6	80	60	73.3	53.3
Others	10.3	47.3	56.3	20.2	57.1	59.6	64.4	40.3	27.4	47.9

Table: High Thrombotic risk factors.

20% OF PATIENTS WITH PANCREATIC CANCER CARRY A PATHOGENIC VARIANT

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Introduction: Pancreatic cancer represents 2% of all cancers and 5% of cancer-related deaths. Pathogenic variants in genes have been associated with an increased risk of developing cancer of the pancreas. Treatment with PARP inhibitors is applied to patients with pancreatic cancer who carry pathogenic variant in genes involved in the homologous recombination repair (HRR) pathway.

Aim: The purpose of this work is to determine the pathogenic/likely pathogenic variants in genes that predispose to cancer in patients with pancreatic cancer.

Methods: A total of 113 patients with pancreatic cancer were referred to our laboratory for genetic testing. Analysis of 52 genes involved in heredity predisposition to cancer was performed using Next Generation technology Sequencing - NGS).

Results: Pathogenic/likely pathogenic variant was detected in 20% of patients analyzed. Among individuals with pathogenic/likely pathogenic variants, 60% had a positive finding in one gene associated with pancreatic cancer: *ATM* (20%), *BRCA1* (20%), *BRCA2* (12%), *CDKN2A* (4%), *PALB2* (4%) while 40% had positive findings in other genes associated with cancer predisposition. More specifically, in genes *CHEK2* (16%), *MRE11* (4%), *RAD50* (4%), *RAD51C* (4%), *MUTYH* (8%) and *NTLH1* (4%). Furthermore, 84% of pathogenic variants were identified in genes related to the HRR pathway (*ATM, BRCA1, BRCA2, CHEK2, MRE11, PALB2, RAD50* and *RAD51C*).

Conclusions: Our results indicate that genetic testing is important for patients with pancreatic cancer as 20% of subjects had findings associated with pancreatic or other cancer. In addition, in16.6% of patients were identified pathogenic/likely pathogenic variants in HRR genes, and these patients may benefit from targeted therapies such as PARP inhibitors or platinum-based therapy.

TRANSCRIPTIONAL ALTERATIONS IN PAIRED TUMOR SAMPLES FOLLOWING PARP INHIBITOR TREATMENT IN HEAD AND NECK SQUAMOUS CELL CARCINOMA (HNSCC)

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Background: The study investigates the effects of Poly-Adenosine diphosphate-Ribose Polymerase inhibitors (PARPi) on the tumor microenvironment (TME) in individuals with Head and Neck Squamous Cell Carcinoma (HNSCC) undergoing treatment, specifically focusing on Olaparib alone or combined with cisplatin or Durvalumab.

Methods: Pre- and post-treatment FFPE whole tissue sections from 30 HNSCC patients, enrolled in OPHELIA phase II trial OPHELIA, (NCT02882308; olaparib alone, $n = 9$; cisplatin plus olaparib, $n = 12$; durvalumab plus olaparib, $n = 9$), were employed. The mRNA transcripts were hybridized to 4-color-coded tags, specific for each of the targets included in the 770-plex PanCancer IO360 panel (NanoString), measured on the nCounter platform and analyzed. Pre- and post-treatment CD163 and CSF1R were also assessed using quantitative immunofluorescence (QIF) in three patients, with the highest differential expression in the corresponding transcripts. P-values were adjusted using the Benjamini and Yekutieli False Discovery Rate (FDR) adjustment.

Results: The findings indicate that Olaparib-based treatment, significantly influences the TME in HNSCC patients. Post-treatment analysis revealed a notable increase in intratumoral macrophages. Transcriptomic analysis showed a significant upregulation of genes associated with macrophages and myeloid lineage, including CD163, CSF1R, CD14, and TNFSF4 (P adjust <0.05). Moreover, genes involved in antigen presentation (e.g., HLA-DMA), chemokine- and cytokine-signaling cascades (e.g., CCL14, CXCL12, CXCR4), Toll-like receptors (e.g., TLR4), and angiogenesis (e.g., PDGFRB, VEGFB, COL11A1) were upregulated post-treatment (Padjust<0.05). Additionally, increased expression of transcripts related to pro-inflammatory cytokine signaling (e.g., IL32), lymphocytes (e.g., CD4), and apoptosis (e.g., BCL2) was observed post-treatment (Padjust <0.05).

Conclusions: These findings suggest that PARP inhibitor therapy, particularly Olaparib-based regimens, may induce macrophage-mediated immune suppression in HNSCC, potentially impacting treatment outcomes and resistance mechanisms.

HIGH EGFR MUTATION DETECTION RATE IN PATIENTS WITH LUNG CANCER: THE EXPERIENCE OF A SINGLE CENTER IN GREECE ON 1199 SAMPLES

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Introduction: The selection of Non-Small Cell Lung Cancer (NSCLC) patients, who may benefit from targeted therapy with Tyrosine Kinase Inhibitors (TKIs), is based on *EGFR* gene mutation detection, among others.

Aim: To investigate the detection rate of clinically significant variations in the *EGFR* gene and the comparison between different methods applied.

Methods: From 2019-2022 1199 patients with NSCLC were referred to our lab for *EGFR* mutation detection. DNA was extracted from FFPE tissue samples (Cobas® DNA Sample Preparation Kit, ROCHE and AmoyDx FFPE DNA/RNA, Amoy Diagnostics) or plasma (QIAamp Circulating nucleic acid kit, QIAGEN and Cobas® cfDNA Sample Preparation Kit, ROCHE). Mutation detection was either performed by RT-PCR (Cobas® EGFR Mutation Test v2, ROCHE or Super-ARMS® EGFR T790M Mutation Detection Kit or AmoyDx® EGFR 29 Mutations Detection Kit or AmoyDx® Pan Lung Cancer PCR Panel, Amoy Diagnostics) or NGS (AmoyDx® Essential NGS Panel Kit or AmoyDx® HANDLE Classic NGS Panel Kit, Amoy Diagnostics) sequenced on NextSeq500/550 (Illumina). For NGS data analyses, validated pipelines were utilized within the ANDAS Data Analyzer (Amoy Diagnostics).

Results: A total of 753 (739 accepted) samples from unique patients were analyzed by RT-PCR and 446 by NGS-based methods. Mutation detection rate was 15% and 13%, respectively (overall 169/1185, 14%). Of the cases with a negative result after FFPE-NGS testing, 34% (86/254) had at least one QC metric not met. Most frequently detected variants were Ex19del, L858R and Ex20ins with the same distribution when comparing RT-PCR vs NGS-based methods. Of the 169 positive results, 134 (83%) were sensitizing mutations and 35 (17%) were mutations related to resistance to 1st and 2nd generation TKIs, of which 12/35 (7%) was shown to be acquired.

Conclusions: Fourteen percent (14%) of this NSCLC patient cohort were suitable candidates for targeted therapy with 1st-2nd or newest generation TKIs. RT-PCR/NGS-based methods are comparably efficient, while NGS-based methods are superior due to their ability to detect a wider range of *EGFR* mutations and/or clinically significant variants in additional genes which serve as biomarkers for targeted therapy. Attention should be drawn to sample quality, since compromised sample quality may contribute to false negative results.

DEFINING A STROMAL SIGNATURE TO PREDICT PROGRESSION OF PRE-INVASIVE DUCTAL CARCINOMA IN SITU (DCIS) OF THE BREAST

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Introduction: The percentage of women diagnosed with Ductal Carcinoma in Situ (DCIS), a pre-invasive stage of breast cancer, has increased since the implementation of the mammographic screening programme. Although DCIS is not a lethal disease, currently all women diagnosed with it are treated as if they were going to progress, because there is no way to predict the progression of the disease and stratify patient treatment. Research on tumour cells has thus far not been able to link genetic changes to the risk of progression. This has led to an increased focus on the role of the tumour microenvironment in tumour growth and progression.

Aim: We hypothesise that an accumulation of changes in the peri-ductal DCIS stromal environment can promote invasion and thus progression from DCIS to invasive disease. We aimed to identify changes in the stromal compartment differing between normal, pure DCIS and DCIS with invasion (DCIS+invasion) that may signify risk of future progression.

Methods: Tissue samples of four patients that concurrently had normal breast, pure DCIS and invasive cancer were selected and underwent RNAseq (n=12). Since the focus was on the microenvironment, primary fibroblasts from the same samples also underwent RNAseq. 2D and 3D functional assays on primary breast fibroblasts from the same patients were also undertaken.

Results: Analysis of primary fibroblasts by RNAseq and functional assays revealed no differences between normal, pure DCIS or invasive samples. From tissue RNAseq we identified a series of 50 genes that showed a stepwise increase (n=18) or decrease (n=32) in expression from normal, pure DCIS or invasive cases. These genes involved pathways including collagen degradation and crosslinking, avβ3 integrin, and biological processes including T-cell activation. The majority of the pathways and processes were connected to elements of the microenvironment. Where antibodies were available (for 3 gene targets: FN1; VCAN MMP11), identified markers were validated by immunohistochemistry or RNAScope on an independent tissue cohort that included normal (n=29), pure DCIS (n=29) and DCIS with invasion (n=15) cases. These genes were combined in a signature and an in silico analysis of public datasets that included independent normal, DCIS and invasive cases from patients also validated these markers/signature.

Conclusions: This study has identified a panel of genes showing altered expression between normal, pure DCIS and invasive cancer tissues, associating with prognosis on public datasets. We propose the lack of changes found in primary fibroblasts is a result of culture-induced fibroblast activation. These results emphasise the importance of the tumour microenvironment in disease progression.

NATIONAL COMMUNITY ONCOLOGY DISPENSING ASSOCIATION (NCODA) AND NCODA GREECE: ACTIONS AND PERSPECTIVES

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Introduction: NCODA – National Community Oncology Dispensing Association is an independent, non-profit organization which was founded in 2020 at the University of Missouri. The organization consists of a range of healthcare professionals including oncologists, pharmacists and nurses. During the last two years, Professional Student Organization (PSOs) have been established organizations in the USA, as well as in Europe. A typical example is the newly established NCODA Greece, which provides students with the opportunity of networking and expanding their knowledge in oncology, contributing to their training as upcoming healthcare professionals.

Aim: The goal of NCODA Greece is to inform healthcare professionals, through a multidisciplinary approach, about the optimal provision of oncology healthcare services in Greece. The vision of NCODA Greece and NCODA as a whole, is the creation of a patient-centered community which will be characterized by innovation and provision of high quality healthcare services.

Methods: Among the various initiatives of NCODA is the good dispensing practice, also known as Medically Integrated Dispensing (MID), and the CAWT – Cost tool Avoidance and Waste Tracker Tool. Proper dispensing practices ensure the timely execution of medicine prescriptions and by extension, timely treatment initiation. The latter is of major importance to cancer patients, as delayed treatment initiation is associated with reduced survival and quality of life. In addition, the CAWT tool provides an overview of the calculated costs due to failed oncology drug dispensing.

Results: With the help of the CAWT tool, the quantification of MDI benefit over conventional drug dispensing practices, amounts to 7 million dollars for 26 community pharmacies over a period of five years. Positive results were observed in cancer patients, due to their compliance regarding treatment initiation and duration.

Conclusions: The adoption of MID and CAWT tool is expected to improve the way pharmacies operate both in the USA and in Greece.

INCREASING TARGETED THERAPY OPTIONS FOR mCRPC PATIENTS USING MULTIGENE NGS PANEL

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Introduction: Metastatic prostate cancer (mCRPC) is characterized by increased clinical and molecular heterogeneity, as well as high mortality. Next Generation Sequencing (NGS) leads to the identification of genomic changes that are therapeutic targets of the disease. Such mutations can be found at the somatic or germ line level and involve a variety of cell mechanisms, such as the DNA repair machinery (HRR & MMR genes), and other signaling pathways.

Aim: The purpose of this study is the detailed characterization of the genomic profile of mCRPC patients and the assessment of its clinical use.

Methods: In the present study, 75 mCRPC patient samples were processed. Detection of genomic alterations and fusions was performed through an NGS panel of 513 genes, which are relevant to targeted molecular therapy or immunotherapy. In addition, genetic markers such as TMB, MSI and %gLOH were calculated in a subset of patients.

Results: At least one mutation was detected in ~90% of patients, including SNVs, CNVs, and fusions. The most frequently mutated genes were CDK12 (9.3%), ATM (6.7%) and PIK3CA (5.3%). Additionally, mutations were identified in 2.7% of FANCA and 2.7% of PTEN. TMB was calculated in 52 patients, of which 9.5% were high. Microsatellite Instability (MSI-high) was detected in 4.5% of patients and %gLOH was elevated in 37.5% of the tested cases. A mutation in an HRR gene was present in 29% of patients, matching them to treatment with PARP inhibitors. 18.7% of the patients received biomarker results with indications for off-label treatment. The calculation of genetic biomarkers, such as TMB, MSI, and LOH, led to an increase in the number of patients who could receive on-label treatment, even in cases without a finding at the DNA or RNA level. Finally, due to the approval of new drugs, the reevaluation of the analysis results increased the proportion of patients who would benefit from targeted therapy by 20%.

Conclusions: Tumor profiling is essential for biomarker identification in mCRPC, as more than half of patients were positive for a biomarker associated with either targeted therapy or immunotherapy.

LIQUID BIOPSIES: IS THERE CONCORDANCE WITH TISSUE BIOPSIES?

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Introduction: Circulating tumor DNA is a fragment of total free circulating DNA in cancer patients [1]. The application of Next Generation Sequencing with the use of high sensitivity platforms permits the parallel characterization of multiple genes providing valid results with a short turnaround time [2].

Aim and Methods: To investigate the concordance of results between tissue and matched liquid biopsies based on ctDNA we prospectively collected tissue samples from 45 patients with metastatic colorectal cancer at diagnosis and at the same time we collected matched peripheral blood samples. Further on, we used NGS to identify both tissue and liquid samples mutations for all 45 patients. For tissue analysis we applied Ion Ampliseq Colon and Lung Cancer Research Panel v2 checking for hot spot mutations in 23 genes with clinical relevancy in colorectal cancer. For blood sample investigation we used Oncomine™ Pan-Cancer Cell-Free Assay (Thermo Fisher Scientific) checking 52 genes.

Results: Patients median age was 65 years old, 60% of the being male and 71% having primary tumor location in left colon whereas main metastatic sites identified were the liver and the lungs. Most commonly mutated genes were TP53, PIK3CA, SMAD4, KRAS, BRAF, NRAS. Two patients were found to harbor microsatellite instability high tumors (MSI-H). The concordance between tissue and liquid biopsy samples for KRAS mutation identification was up to 86%. In addition, the concordance for NRAS and BRAF mutations was 100% and 97,7% respectively. [3,4]

Conclusions: The use of circulating tumor DNA for the identification of mutations with the application of NGS resulted in very high concordance with tissue NGS results. The overall agreement between the two methods exceeded 85% when profiling patients with metastatic colorectal cancer, thus supporting the application of liquid biopsies in this set of cancer patients.

References:

1. J. Pascual, G. Attard, F.-C. Bidard et al., ESMO recommendations on the use of circulating tumour DNA assays for patients with cancer: a report from the ESMO Precision Medicine Working Group, Annals of Oncology, volume 33, issue 8, p750-768, August 2022
2. Katrisiou M., Zarkavelis G., Pentheroudakis G. et al., Clinical Application of Next-Generation Sequencing as A Liquid Biopsy Technique in Advanced Colorectal Cancer: A Trick or A Treat? Cancers (Basel). 2019 Oct 16;11(10):1573. doi: 10.3390/cancers11101573.
3. CJ Clopper and ES Pearson, "The use of confidence or fiducial limits illustrated in the case of the binomial." Biometrika 26:404-413, 1934.
4. Watson PF, Petrie A. Method agreement analysis: a review of correct methodology. Theriogenology. 2010 Jun;73(9):1167-79. doi: 10.1016/j.theriogenology.2010.01.003. PMID: 20138353.

MECHANISM-BASED DISEASE DEFINITION AND DIAGNOSIS IN AN ORGAN-AGNOSTIC MANNER FOR NETWORK PHARMACOLOGY

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Introduction: Currently, in most non-communicable diseases the causal underlying mechanism remains unknown. Thus, we can only chronically treat disease symptoms while the molecular pathomechanism remains. The main conceptual gap adding to these ineffective therapies is the way we define diseases. Most disease definitions are just diagnostic algorithms of clinical values and symptoms, grouping together heterogeneous patient populations under common umbrella-terms. Oncology, neurology and cardiology are no exception to this, all having high unmet medical needs.

Aim: We here aim to provide a new strategy on how we should define diseases based on the underlying dysfunction, diagnose them with mechanism-based biomarkers and treat them with network pharmacology approaches.

Methods: We construct signalling modules based on their protein-protein interactions in the interactome using clinically validated seed proteins, e.g., driver genes mutations in cancer or disease risk genes. Based on these modules, we identify disease mechanisms and potential drug targets. These we validate in vitro with mechanism-based diagnostic assays. Using precision biomarkers, we stratify patients for pharmacological interventions where two or more drugs acting on the same module are combined with a network pharmacology approach.

Results: With de-novo disease modules, we can i) identify mechanistic dysfunctions and registered drugs to target them, ii) apply diagnostic assays (using blood or tissue biopsies) to identify the patients with the relevant underlying pathomechanism and iii) apply a therapeutic strategy for the stratified patients. We show this in different disease phenotypes, such as thyroid cancer and diffuse intrinsic pontine gliomas (DIPG), hypertension and heart failure with preserved ejection fraction (HFpEF).

Conclusions: Mechanism-based disease redefinition and diagnosis for network pharmacology intervention will pave the way towards a new era of precision medicine.

SARCOMAS: CLINICAL CHARACTERISTICS AND THERAPEUTIC CHOICES – REAL WORLD DATA FROM A TERTIARY HOSPITAL IN THESSALONIKI

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Introduction: Sarcomas are rare cancers and are divided into: soft tissue sarcomas (STS) with more than 80 subtypes, bone, kaposi and gastrointestinal stromal tumors (GIST). The lack of clinical trials based on the different histotypes makes real – world data (RWD) and the cooperation between reference centers necessary for guiding therapeutic strategies.

Aim: Recording the clinical and pathological characteristics and therapeutic choices of the various sarcoma subtypes that were treated in the Medical Oncology Department of the Aristotle University of Thessaloniki.

Methods: A retrospective study of the Department's record data since 1999, was conducted. The clinical and pathological characteristics as well as the therapeutic choices in patients with STS, GIST, Kaposi and bone sarcomas were recorded.

Results: In total, 90 patients were included, of which 46 (51.1%) with STS, 17 (18.9%) with GIST, 8 (8.9%) with bone sarcomas and 19 (21.1%) with Kaposi. The mean age (SD) at diagnosis was 60.53 (13.3) years for GIST and 72.12 (24.23) years for Kaposi, while bone and soft tissue sarcomas are diagnosed mainly in patients younger than 60 years.

The most common primary GIST location was the stomach (52.9%), whereas for Kaposi the lower extremities (63.2%). The most common STSs were leiomyosarcomas and liposarcomas , while Ewing was the most common bone sarcoma. Most of the patients were diagnosed at an early stage and underwent surgical excision [41 out of 46 patients with STS, (89.1%) and 7 out of 8 patients with bone sarcomas, (87.5%)]. A small percentage of patients received neoadjuvant chemotherapy (1 patient with STS, 3 with bone sarcomas and no one with GIST), while in the adjuvant setting imatinib and epirubicin were the most common therapeutic choices for GISTs and STSs, respectively. In the advanced setting, anthracycline – based chemotherapy was the most common therapeutic choice. In a significant number of patients, a review of the pathology report was requested. In 2 patients with STS the reports were different but in the Kaposi cases no differences were observed.

Conclusions: Real – world data constitute a useful tool in determining therapeutic choices, especially in sarcomas, due to the different histologic subtypes and the lack of clinical trials.

METASTATIC MELANOMA PATIENTS SURVIVING 5 YEARS AND BEYOND UNDER IMMUNOTHERAPY AND/OR TARGETED TREATMENT

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Introduction: Immunotherapy and targeted treatment have transformed the prognosis of metastatic melanoma. Indeed, it is becoming more and more common for metastatic melanoma patients to survive more than 5 years since treatment initiation.

Aim: To describe our experience of metastatic melanoma patients receiving one more lines of novel treatments, starting between 2014-2018, who are still alive at 5 years and beyond since treatment initiation.

Methods: We extracted data regarding demographic characteristics, objective response and patient survival of patients with metastatic melanoma, who were started on immunotherapy and/or targeted agents since 2014, and remain alive by February 2023.

Results: Since 2014, we have admitted 150 metastatic melanoma patients, who received treatment with immune checkpoint inhibitors (anti-CTLA4, anti-PD-1) and/or BRAF/MEK inhibitors. Among them, 28 patients have managed to be alive at least 5 years since metastatic disease treatment initiation. The majority (64%) of the 28 long term survivors were male (18/28). LDH serum was within normal limits in 68%. 11 out of 28 patients (39%) had only subcutaneous and lymph node metastases (stage: M1a0, M1a1) and another 11/28 (39%) had lung metastases (stage: M1b0, M1b1). BRAF mutations have been found in more than half of the long term survivors group (15/28, 54%). 15 patients (54%) received at least one immune checkpoint inhibitor containing regimen, 7/15, 6/15 and 2/15 as first, second and third treatment line, respectively. Complete responses were observed in 10/15 patients receiving immunotherapy and a partial response was noticed in 5/15 of them with 8 patients still on treatment in February 2023, while treatment was withdrawn in the other seven due to toxicity. Overall survival ranges between 60-97+ months. 18% of long term survivors (5/28) were treated with BRAF/MEK inhibitors combinations, all as first line of treatment, all achieving complete response, and an overall survival from 60 to 100+ months. Both treatment types were administered to 8/28 patients, 4 of whom received BRAF/MEK inhibitors as first treatment line and immunothrerapy as second treatment line, while the other form followed the reverse treatment sequence, surviving from 64 to 98+ months.

Conclusions: Novel treatments are able to induce high response rates and prolonged overall survival among metastatic melanoma patients. Characteristics of long term survivors should be thoroughly studied, aiming to define the profile of patients with potential for full recovery.

HYPERPROGRESSIVE DISEASE FOLLOWING IMMUNOTHERAPY IN PATIENTS WITH NRAS-MUTANT MELANOMA

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Introduction: Hyperprogressive disease in cancer patients is defined as paradoxical acceleration of tumor growth kinetics after immunotherapy in various cancer types including melanoma. It is associated with extremely poor prognosis. Neither linkage to any specific biological mechanisms nor predictive factors for its occurrence have been identified so far. Mutations in the NRAS gene are found in about 15%-20% of melanomas. This subgroup is characterized by a more aggressive biological behavior and a poorer prognosis.

Aim: The presentation of 2 cases with hyperprogressive disease in patients with surgically resected melanoma who received anti-PD1 agents as adjuvant therapy. Common molecular features, namely mutations in the NRAS gene, were recognized in both cases.

Cases Presentation: The first patient, 50-year-old male, with a history of HIV infection under antiretroviral therapy and normal CD4 lymphocyte count, was diagnosed with locally advanced cutaneous melanoma on the distal phalanx of the right middle finger. The pathologic stage after surgical resection and lymph node dissection was St IIID (pT4aN3). Further staging with PET/CT and brain MRI was negative for distant metastatic disease. Therefore, the patient was started on adjuvant immunotherapy with nivolumab. After only 2 administrations of nivolumab, the patient experienced dramatic disease progression with numerous subcutaneous nodules and multiple liver metastases. Subcutaneous nodule biopsy confirmed disease progression, while molecular testing revealed BRAF wild type, along with the p.Q61K mutation in the NRAS gene. Subsequently, the patient received binimetinib, leading to tumor response lasting only 2 months. Progressive liver disease and new brain metastases led to clinical deterioration and the patient died 14 months after initial diagnosis.

The second patient, a 70-year-old woman, was diagnosed with cutaneous nodular melanoma of the right upper arm. As there was no evidence of distant metastases on CT scans, the patient initially underwent surgery with wide resection and lymph node dissection. Histologic examination revealed pathologic stage IIIC (pT4bN2a). Adjuvant immunotherapy with pembrolizumab was administered, but after the 2nd cycle of treatment the patient presented with clinical deterioration and innumerable liver metastases diffusely scattered throughout the organ appeared on new CTs. Molecular testing was positive for the p.Q61A mutation in the NRAS gene. She received binimetinib with very short clinical improvement and died because of liver failure.

Conclusions: The common molecular features and the similar clinical course of the 2 cases generate the hypothesis of the possible involvement of NRAS mutations in the immune mechanisms responsible for hyperprogression. Of course, more data are needed to investigate this question.

NUMBER AND PROFILE OF SOMATIC MUTATIONS IN PRIMARY CLEAR CELL RENAL CELL CARCINOMA ARE ASSOCIATED WITH STAGE AND PROGNOSIS

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Introduction: Clear cell renal cell carcinoma (ccRCC) represents the most common RCC subtype and has a distinct molecular profile. Nevertheless, until present the risk of recurrence after nephrectomy for primary ccRCC is estimated in daily practice solely based on clinical criteria.

Aim: The aim of this study was to assess the prognostic relevance of common somatic mutations with respect to tumor aggressiveness and outcomes of ccRCC patients after definitive treatment.

Methods: Primary tumors from 37 patients with ccRCC who underwent radical nephrectomy were analyzed for presence of somatic mutations. A 15-gene targeted next-generation sequencing panel was used, consisting of ATM, BAP1, KDM5C, MET, MTOR, NF2, PBRM1, PIK3CA, PTEN, SETD2, SMARCB1, TP53, TSC1, TSC2, and VHL genes. Associations to histopathologic characteristics and outcomes were investigated in the study cohort (n=37) and validated in the TCGA ccRCC cohort (n=451).

Results: VHL was the most frequently mutated gene (n=19; 51%), followed by PBRM1 (n=10; 27%), BAP1 (n=5; 13%), SETD2 (n=5; 13%), KDM5C (n=2, 5%), ATM (n=2, 5%), MTOR (n=2, 5%), and PTEN (n=1, 3%). Eleven patients (30%) did not have any somatic mutations within the 15-gene panel. Tumors harboring no mutations at all or only VHL mutations (n=19, 51%) were associated with smaller size (pT1-2 n=17; 89%) and earlier stage (I/II n=17; 89%). Presence of any other gene mutations in various combinations with or without VHL was enriched in larger (pT3, n=7; 41%; Chi-square two-tailed test p=0.02) and more advanced tumors (III n=7; 41%; Chi-square two-tailed test p=0.02). No recurrences were noted in patients with zero or VHL-only mutations whereas 3 patients (17%) with "non-VHL" somatic mutations relapsed within 5 years (p=0.06). Presence of somatic "non-VHL" mutations in PBRM1, BAP1, SETD2, KDM5C, ATM, MTOR, or PTEN genes in 451 TCGA ccRCC patients was associated with a significantly shorter disease-free survival (DFS) compared to those with unaltered tumors (p<0.001).

Conclusions: These findings support the prognostic value of "non-VHL" mutations including PBRM1, BAP1, SETD2, KDM5C, ATM, MTOR, and PTEN in primary ccRCC tumors as surrogates of earlier recurrence and potential selection for adjuvant therapy.

APPLICATION OF LIQUID BIOPSIES BEFORE AND AFTER FIRST LINE THERAPY IN PATIENTS WITH METASTATIC COLORECTAL CANCER.

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Introduction: Liquid biopsies are minimally invasive techniques for identifying mutations in clinically relevant genes in patients with metastatic colorectal cancer providing real time information during the disease course. [1,2]

Aim and Methods: The aim of our study was to compare the molecular profile of patients with metastatic colorectal cancer between the time of diagnosis and at disease progression after fist line therapy. We prospectively collected blood samples form patients with metastatic colorectal cancer at those two time points. After isolating circulating tumor DNA from the peripheral blood samples, we performed next generation sequencing (NGS). Blood sample analysis was don using Oncomine™ Pan-Cancer Cell-Free Assay (Thermo Fisher Scientific) checking for mutations in 52 genes.

Results: From a total of 45 patients with metastatic colorectal cancer who were evaluated for mutations at disease diagnosis, 17 patients were selected for whom monitoring also took place at disease progression. In 20% of the patients there was a shift in KRAS status between the two time points with some of the patients either having a newly acquired KRAS mutation or loss of one compared to baseline. One patient had a newly acquired NRAS mutation, while no difference was observed in BRAF status between baseline and disease progression. One patient had EGFR amplification and one also had FGFR amplification compared to baseline results.

Conclusions: KRAS, NRAS and BRAF mutations have been associated with resistance to targeted therapy in patients with metastatic colorectal cancer and their tissue status identification is imperative at diagnosis of the disease. However, there are cases of newly acquired mutations in this set of genes after first line therapy and this might be an adverse prognostic factor in further lines of therapy. On the contrary, using liquid biopsies, we were also able to identify a subset of patients who present with loss of RAS mutation after first line therapy who could be possible candidates for targeted therapies.

References:

1. Kastrisiou M, Zarkavelis G., Kougioumtzi A., et al., Development and Validation of a Targeted 'Liquid' NGS Panel for Treatment Customization in Patients with Metastatic Colorectal Cancer, Diagnostics (Basel). 2021 Dec; 11(12): 2375
2. De Mattos-Arruda L., Siravegna G. How to use liquid biopsies to treat patients with cancer., DOI: https://doi.org/10.1016/j.esmoop.2021.100060

CASE REPORTS OF MALIGNANCY IN PATIENTS RECEIVING TREATMENT WITH USTEKINUMAB

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Introduction: Ustekinumab is a human monoclonal antibody used in moderate to severe forms of psoriasis and Crohn's disease. In some patients it is associated with reactivation of Epstein-Barr virus (EBV) infection and/or cancer.

Aim: To determine the occurrence of reactivation of EBV infection and cancer among patients receiving Ustekinumab.

Methods: Medical records of Dermatology and Gastroenterology Clinics were scrutinized to identify patients with Crohn's disease or plaque psoriasis receiving Ustekinumab.

Results: Forty six patients treated with Ustekinumab, thirty seven of them were being treated for Crohn's disease and nine for psoriasis. None of the patients who received Ustekinumab as a treatment for Crohn's disease developed cancer while two of the nine patients treated for psoriasis developed cancer during the treatment with Ustekinumab. The first patient developed breast cancer. The second patient had EBV positive gastric adenocarcinoma.

Conclusions: We noticed higher incidence of malignancy among patients receiving Ustekinumab for psoriasis than we expected. No cases of malignancy among patients receiving Ustekinumab for Crohn's disease were noticed.

CASE REPORT: RELAPSING BONE HEMANGIOMA, THE EXAMPLE OF «BAD» BENIGN TUMOR

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Introduction: Bone hemangioma is a benign disease, with a frequency of <1% of all bone neoplasms. It is usually observed in the 5th to 6th decade, mainly in women. Most bone hemangiomas are asymptomatic and are mainly located in the spine and in the skull.

Case presentation: 23-year-old woman, with no medical history, diagnosed in 2016 with osseous hemangioma in the sphenoid sinus, after vision loss. Since then there was a recurrence at left parietal bone (2018) and at lumbar spine (2020), with accompanying symptoms. The tumors were removed surgically. After that, imaging shows multiple lesions in the spine, pelvis, sides and hips. Clinical examination revealed a palpable mass at the right breast. Review of the histological image ruled out hemangioendothelioma. Then complete imaging examination confirmed the multiple bone lesions while the palpable formation of breast revealed to be a hemangioma by histological examination. Due to symptomatic disease, and the absence of mutations from molecular testing, the patient started receiving propanolol 40mg x1, based on pediatric protocols, with close cardiological and ophthalmological monitoring. She has been receiving treatment for 19 months with good response and tolerance but with numbness in the lower extremities. New imaging revealed: multiple bone hemangiomas along the thoracic and lumbar spine causing stenosis of the spinal canal. The patient is referred for neurosurgical assessment to decompression.

Aim: The citation of the incident in question aims in vigilance regarding histologically benign tumors, which may be aggressive (malignant) clinical course. It also aims to highlight the deficiency treatment options due to the rarity of the disease and the necessity of specialized centers report on rare diseases.

Results/Conclusion: This incident exemplifies the aggressiveness it can have an otherwise benign disease and of necessity consulting and cooperation with specialized centers for the development of therapeutic options and personalized treatment.

PANCREATIC CANCER IMMUNOTHERAPY: PROSPECTS OF CAR-NK CELLS FROM iPSCs

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Introduction: Pancreatic cancer is one of the few cancers for which survival has not substantially improved over the past 25 years and its five-year survival rate is only 12%. For these reasons our team tries to integrate CAR-NK cells and induced pluripotent stem cells (iPSCs) into pancreatic cancer treatment.

Aim: The project "Herophilus" aims to propose a new therapeutic approach for the immunotherapy of patients with pancreatic cancer, utilizing CAR-NK cells and induced pluripotent stem cells (iPSCs), derived from somatic cells of healthy donors.

Methods: Somatic cells (keratinocytes of skin or hair follicles, urothelial cells) are isolated from healthy donors and then are reprogrammed to induced pluripotent stem cells (iPSCs), which is based on the insertion of specific genes (Oct4, Sox2, Nanog) that encode transcription factors necessary for the adoption of stem cell's characteristics. Subsequently, induced pluripotent stem cells (iPSCs) are differentiated into NK cells. Finally, the CAR receptor is built on the NK cell membrane. CAR-NK cells are administered to the patient as an off-the-shelf product.

Conclusions:
- Cell therapies with CAR cells are still new, but they have already shown remarkable results.
- CAR-NK cells represent a promising approach to treating solid tumors, including pancreatic cancer.
- NK-cells can be produced by the differentiation of iPSCs derived from somatic cells of healthy donors.

However, further research is needed to optimize the efficacy and safety of CAR-NK cells and to determine optimal antigen targets for different types of solid tumors.

A SYSTEMATIC REVIEW OF PAIN ASSESSMENT IN PATIENTS WITH HEMATOLOGICAL MALIGNANCIES

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Introduction: Pain presents in adult patients with hematological malignancies (HM), due to the disease itself and to the side effects of treatments. However, it is neither timely or properly assessed, so it goes by underdiagnosed and undertreated, thus affecting patients' quality of life (QoL).

Aim: To investigate the assessment of pain in patients with HM.

Methods: A systematic review was carried out in the PubMed database, with the following terms in English for the years 2012 to 2022: pain, hematologic malignancies, assessment, multiple myeloma, lymphoma, leukemia, hematopoietic stem cell transplantation.

Results: Thirty-seven studies were included in the review. They present large heterogeneity in terms of the research questions, study population, study design and outcomes. Sixteen studies included pain assessment in patients who underwent hematopoietic stem cell transplantation, twenty included multiple myeloma patients and the rest of the studies had a sample of mixed populations with HM. Five studies were found that included pain assessment and management before and after interventions of acupuncture, music therapy, feet massage and usage of special mouthwash for oral mycositis. The pain induced from peripheral neuropathy was reported in two studies and the one from oral mycositis in four studies. Twenty-six studies, assessed QoL with measurement instruments that included an item on pain. They also present heterogeneity regarding measurement tools, since others use a specific pain tool and others a tool for QoL or functionality.

Conclusions: The common theme that emerged is that pain is a frequent symptom that affects patient's QoL in all aspects (physical, emotional, social) in varying degrees. The systematic assessment of pain by healthcare professionals, using appropriate measurement tools will contribute to a better understanding of patients' pain experience and consequently to its proper management, However, with weaknesses and shortcomings in the revised studies' methodology results are difficult to generalize.

ANTINUCLEAR ANTIBODIES IN OVARIAN CANCER PATIENTS

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Introduction: Antinuclear Antibodies (ANAs) are a spectrum of autoantibodies that target various nuclear and cytoplasmic components of cells [1,2]. They are important serological markers for autoimmune diseases [1,2]. ANAs also occur in the serum of patients with different types of cancer and could potentially be promising diagnostic and prognostic biomarkers [1,2].

Aim: The determination of the frequency of ANAs in patients with ovarian cancer and with other types of cancer and the correlation with overall survival.

Material-Methods: Sera from 77 patients with ovarian cancer were retrospectively studied by the indirect immunofluorescence technique on a Hep-2 cell substrate. Sera from 48 patients with other cancers were used as a control group, specifically 17 with colon cancer, 14 with lung cancer and 17 with breast cancer.

Results: Considering the titer ≥1/80 as a positivity limit, in the group of patients with ovarian cancer the presence of antinuclear antibodies was found in 41 patients (41/77, 53.2%), while in the control group in 15 patients (15/48, 31 .2%). There was a statistically significant difference between the two groups (p=0.016). The fine dot fluorescence pattern was predominant in both groups. In the group of patients with ovarian cancer, a trend towards an increase in overall survival was observed in patients with the presence of antinuclear antibodies but statistical significance was not reached (98.6 ± 16.1 vs 63.7 ± 7.2 months, p=0.23).

Conclusions: The presence of antinuclear antibodies was observed in half of the ovarian cancer patients in the study and was associated with a non-statistically significant increase in overall survival. The exact pathophysiological significance of these autoantibodies and their possible positive prognostic significance should be analyzed in larger and prospective studies that will also include the serial measurement of antinuclear antibodies as well as their correlation with systemic therapies.

References:

1. Vlagea A, Falagan S, Gutiérrez-Gutiérrez G, et al. Antinuclear antibodies and cancer: A literature review. Crit Rev Oncol Hematol. 2018;127:42-49. doi:10.1016/j.critrevonc.2018.05.002
2. Heegaard NH, West-Nørager M, Tanassi JT, et al. Circulating antinuclear antibodies in patients with pelvic masses are associated with malignancy and decreased survival. PLoS One. 2012;7(2):e30997. doi:10.1371/journal.pone.0030997

INCIDENCE OF ARTHRITIS IN BREAST CANCER PATIENTS RECEIVING AROMATASE INHIBITORS-PERSPECTIVE TRIAL

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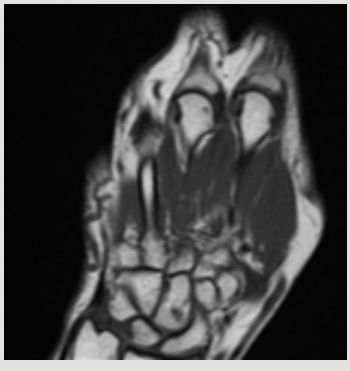
Introduction: Arthralgia is a very common symptom following treatment with aromatase inhibitors in breast cancer patients. Pathogenesis of this adverse event is not very clear, but some of these patients may develop synovitis.

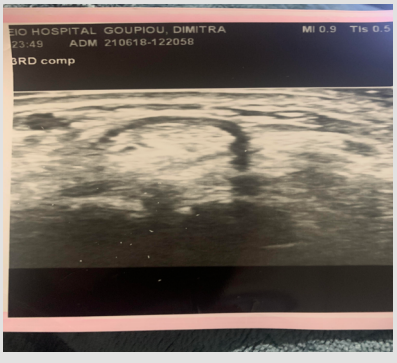
Aim: The incidence and pathogenesis of arthritis in patients with breast cancer receiving aromatase inhibitors.

Methods: Medical history, clinical examination, blood samples for full blood count, biochemical tests, inflammation markers (CRP, TKE), anosological markers (RF, ANA, Anti-CCP), as well as intracellural exression of inflammatory cytokines (IL-17, INF-Γ and TNF-a). Visits were at baseline, 3 months after initiation of treatment and in case of symptoms.

Results: 33 patients were included in the trial, median age 63years, with early breast cancer, ER+ (100%), PR+ (87,9%), ER2- (97%). Most of the patients had stage II disease (36,4%), adjuvant chemotherapy was given in 75,8% of the patients while adjuvant radiotherapy in 81,8%. All of the patients were menopausal and received treatment with letrozole (100%). Among the patients, 6 of them had arthralgias (18,2%), while 5 of them had clinical signs of arthritis (15%), which was confirmed by joint ultrasound and MRI. Median time of symptoms onset was 4,5 months, while it was mainly affected the upper limbs, combined with morning stiffness. There was no statistically significant increase in the inflammation markers, WBC (p:0.73), CRP (p:0.164), TKE (p:0.118) or the inflammatory cytokines, IL-17 (p:0.62), INF-Γ (p:0.11), TNF-a (p:0.254) in patients with symptoms compared to baseline counts. Furthermore, none of the patients had positive RF, ANA, Anti-CCP. 3 of the patients received treatment with prednisolone and 2 of the further treatment with methotrexate, while in 2 of the patients had disease remission with no special treatment.

Conclusions: Letrozole induced arthritis is a quiet common adverse event that may affect patient's quality of life and may need special treatment. The clinical manifestation of the disease has very common characteristics with rheumatoid arthritis but it seems that it is not a systematic inflammation disease.





RADIATION ESOPHAGITIS AND ITS EFFECT ON NUTRITION

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Introduction: The appearance of esophagitis after cancer treatment with radiation is a fairly frequent complication in irradiated tissues, which troubles patients, having effects on swallowing, caloric consumption and nutrition in general.

Aim: The purpose of this study is to investigate the effects of radiation esophagitis on the feeding of patients and the nutritional status of oncology patients, the effect of nutritional management on the course and outcome of the disease, and the determination of treatment methods, to reduce pain and complications and to maintain patients' nutritional intake.

Methods: For the bibliographic review, data collection was used from scientifically documented articles in electronic databases, such as PubMed, GoogleScholar and Embase.

Results: Radiation esophagitis is a common complication among patients receiving radiation therapy, which can have a significant impact on patients' nutritional status. Often, actin esophagitis is asymptomatic and patients may present with nonspecific symptoms (e.g: dysphagia, odynophagia), which however can lead to poor nutrition, weight loss, and dehydration, and ultimately poor clinical outcome and decreased patient response. in treatment. Therefore, the important role of nutritional support of oncological patients for the prevention and treatment of radiation esophagitis is demonstrated.

Conclusions: The evaluation of the nutrition of oncology patients is deemed necessary in order to detect the nutritional risk, both before, during and after treatment. The role of nutritional support in the treatment of actin esophagitis has been well studied. Interdisciplinary collaboration between health scientists can contribute to the prevention and treatment of radiation esophagitis.

BRAF MUTATIONS AND BRAF/MEK INHIBITORS IN PATIENTS WITH NSCLC: A RETROSPECTIVE UNICENTRIC STUDY

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Introduction: Mutations in *the BRAF* gene occur in 3-4% of patients with non-small cell lung cancer (NSCLC). Approximately half of them correspond to V600 mutations, while the other half are non-V600 and highly heterogeneous. Targeted therapy with dabrafenib/trametinib is recommended in patients with NSCLC *BRAF* V600(+), but real-world data on the efficacy and safety of the combination is lacking due to the rarity of the cases.

Aim: To present a cohort of patients with NSCLC and *BRAF* mutations and to assess the efficacy and safety of dabrafenib/trametinib in a real-world setting.

Methods: This was a retrospective unicentric study. Medical records of the Oncology Unit of Sotiria General Hospital between 2018-2022 were searched. Cases with NSCLC and *BRAF* mutations were enrolled and clinicopathological and survival data were recorded.

Results: We identified 13 patients with NSCLC and *BRAF* mutations, seven of which with a V600 (six V600E and one V600K mutation) and six with non-V600 mutations (three G469A/one G469E/one G466V KAI G469R/one L541F KAI N658S). All patients had adenocarcinoma NSCLC. The median age of patients with BRAF V600(+) was 58 (51-74); 4/7 of them were male, and 5/7 were ever smokers. Targeted therapy was given to 6/7, in 83% of the cases as first-line therapy and 17% as second-line. The responses were partial response in 4/6 and stable disease in 2/6. The median PFS was 15.5 months (6-28 months). Hyperpyrexia grade 2 was documented in 3/6, and fatigue grade 2 in 1/6. The median age of patients with *BRAF* non-V600 was 64.5 years (53-71); 6/6 were male and 6/6 ever smokers. There were 4/6 of patients with *BRAF* non-V600 who harbored co-mutations; in particular, three of them also harbored a *KRAS* mutation (G12C/G12S/G12A), one of whom with another co-mutation in *PIK3CA* (E545K KAI E542K). One patient harbored three co-mutations; *PIK3CA* (E542K), *CTNNB1* (S37C) and *RET* (D771N).

Conclusions: Targeted therapy with dabrafenib/trametinib in patients with *BRAF* V600 (+) is effective and safe. Patients with non-V600 mutations are mostly smokers with frequent co-mutations.

DIAGNOSIS AND MANAGEMENT OF INTRASCROTAL NERVE TUMORS

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Introduction: Scrotal tumors of nerve origin occur mostly in the extratesticular tissues of scrotum, such as the spermatic cord and epididymis. These tumors are extremely rare and their diagnosis depends on high suspicion of the urologist.

Methods: A systematic search of the literature in PubMed/Medline and Google Scholar databases concerning intra-scrotal nerve tumors was performed by two independent investigators.

Aim: The aim of the present study was to systematically review the literature concerning this rare entity and highlight proper management and optimal treatment of these neoplasms.

Results: The systematic search retrieved 45 male adults, with a mean age of included patients at 43.9 years. The majority of nerve tumors were extra-testicular (86.7%) and only 13.3% originated from the testis. 51.1% of neoplasms were histologically proved as schwannomas, 44.4% as neurofibromatosis and 4.4% as malignant peripheral nerve sheath tumors. The majority of patients presented with atypical symptoms such as scrotal swelling (51.1%), while only 4.4% of patients were asymptomatic. Ultrasonography is the diagnostic modality of choice (97.2%) for the detection of primary lesion. Surgical excision of the mass was the preferred type of surgery performed (75.6%), whereas orchiectomy was performed only in 22.2% of patients.

Conclusions: Intra-scrotal tumors of nerve origin are extremely rare neoplasms that present mainly in middle-aged males. Increased clinical suspicion is required for accurate diagnosis of this rare entity.

References:

1. Hosseini MM, Geramizadeh B, Shakeri S, Karimi MH. Intrascrotal solitary neurofibroma: A case report and review of the literature. Urol Ann. 2012;4(2):119-21.
2. Bian X, Xia M, Xie H, Cui F, Chen J, Zhang R, et al.. Solitary testicular neurofibromatosis with testicular abscess: a case report. Transl Androl Urol. 2020;9(3):1437-41

CLINICAL DATA AND PROGNOSTIC PARAMETERS OF PATIENTS WITH CHOLANGIOCARCINOMA: A TWO-CENTRE REAL WORLD DATA ANALYSIS

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Introduction: Cholangiocarcinoma is a heterogeneous disease, whose biological behavior and prognosis differs depending on the tumor location. Adequate prospective data on the risk factors and clinical characteristics of patients with this rare tumor are missing, highlighting the importance of real-world retrospective data.

Aim: The aim of this study is to compare patient data as recorded in real world with those of clinical trials.

Methods: In the current study, we retrospectively recorded clinical features, molecular changes, and survival data in patients with cholangiocarcinoma, who were treated in Bioclinic Thessaloniki and University Oncology Clinic of PAGNI.

Results: Our study involved 58 patients with cholangiocarcinoma and an average age of diagnosis of 65.2 years. They were diagnosed from 08/2016 to 11/2022 and the majority was male (30/58) and had intrahepatic cholangiocarcinoma (39/59). 34 patients underwent surgical resection, while in 5 the surgery was palliative. 16/29 patients with radical surgery received adjuvant chemotherapy, while 55% of those operated relapsed. 38 patients received 1st-line treatment, of which 13 received combination chemotherapy and immunotherapy. Obesity, high cholesterol, diabetes and hepatitis virus infection were listed as possible predisposing factors. For example, only four patients had a history of hepatitis virus infection. Furthermore, 24 patients were subjected to molecular screening for somatic mutations and in 14 of them a molecular change was detected, of which 12 suffered from intrahepatic cholangiocarcinoma.

Conclusions: Cholangiocarcinoma's incidence has increased in recent years with intrahepatic predominance. Intrahepatic localization is associated with an increased likelihood of finding molecular changes in the tumor. Testing molecular changes in more patients is expected to reveal new therapeutic targets improving the prognosis of patients with cholangiocarcinoma.

INSOMNIA AS AN EXPRESSION OF EMOTIONAL DISTURBANCE IN FEMALE BREAST CANCER PATIENTS

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Hellenic Medical Company Research of Psychosomatic Disorders

Aim: The purpose of this study was to record the episodes of insomnia in oncology patients and to present the conditions that cause it.

Methods: 46 women with breast cancer, aged 30-65, participated in the study. The data was collected using an anonymous questionnaire, followed by a study with a qualitative analysis of the results.

Results: From the data it appears that women with breast cancer, due to the stressful situations they experience, show depressive behavior. Uncertainty, insecurity and fear about the outcome of the disease adversely affect their psychological state. Thus we have the appearance of psychological tension, a reduction in the ability to manage it, resulting in mental shock. The appearance of physical symptoms (nausea, alopecia, pain) favors psycho-emotional pressure, resulting in the appearance of insomnia. The phenomenon is observed in the first stage of the disease, mainly during treatments. We have a sleep schedule disorder, resulting in the patient's fatigue and exhaustion. Older women are more affected.

Conclusions: Since cancer is a psychosomatic disease, the assistance of health workers is deemed necessary not only for treatment and physical rehabilitation, but also for the fulfillment of mental and emotional needs. It is necessary to create a relationship of trust between patient and doctor, so that there is the possibility of externalizing feelings and fears, as well as suppressing any negative emotion. The information should be provided in a way that is comprehensible and according to the educational and social level. Referral to the psychiatric service may be required, so that the mental state does not worsen the patient's already burdened state of health.

RISK OF SQUAMOUS CELL CANCER (SCC) IN GUM TISSUE AROUND BREAST IMPLANTS

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Introduction: Squamous cell carcinoma (SCC) is the second most common non-melanocytic skin cancer. It appears as a red scaly plaque and is diagnosed with a skin biopsy. The most important risk factors leading to SCC include UV exposure, older age, fair skin, and immunosuppression. There have been cases where SCC has occurred in the scar tissue that forms around the adjunct implants after breast augmentation surgery, invading the breast parenchyma and chest wall.

Aim: In the present work, the correlation of the scar tissue created around breast implants, as a primary focus of SCC occurrence, was studied.

Methods: The study was based on review articles published in the English language as well as Case Reports, in the electronic databases "Pubmed", "Google Scholar" & "Medline". 4 Articles and 5 Case Reports were studied.

Results: Primary SCC arising from the capsule, which is created by scar tissue around breast implants, is believed to be extremely rare with few Case Reports available in the current literature. The common characteristics of the individuals who showed it were the remote history of implant placement (>15 years), acute unilateral pain, breast enlargement as well as locally extensive disease with poor clinical outcome. Also, SCC was detected on the posterior aspect of the implant capsules.

Conclusions: While the mechanism by which SCC is associated with breast implant capsule is not fully elucidated, patients presenting to the hospital with these symptoms several years after breast implant placement should concern physicians to recognize this rare form of implant-related SCC.

OUR EXPERIENCE WITH THE ADMINISTRATION OF TRIFLURIDINE/TIPIRACIL IN PATIENTS WITH METASTATIC COLORECTAL CANCER AFTER AT LEAST TWO LINES OF THERAPY

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Introduction: Trifluridine-tipiracil (Lonsurf) is an oral combination of the antineoplastic nucleoside analog trifluridine (FTD) and the thymidine phosphorylase inhibitor (TPI) tipiracil. It represents a therapeutic option for patients with metastatic colorectal cancer (mCRC) who have received two lines of therapy. FTD/TPI was approved in the European Union in April 2016 based on the results of the RECOURSE trial.

Aim: To present our experience with administering LONSURF to patients with metastatic colorectal cancer in the third line of therapy and beyond. The aim was to study the overall response rate (ORR), the median progression-free survival (mPFS), and the safety of the drug.

Methods: Ten patients with a PS of 0-1 (6 men and 4 women) with an average age of 68 years (42-84) were studied. All patients had undergone molecular testing before starting first-line therapy (KRAS, NRAS, BRAF, MSI), half had a RAS mutation, and all were MSI stable. One patient had a BRAFV600E mutation. All patients had previously received at least two lines of therapy with mFOLFOX6 and FOLFIRI in combination with an anti-VEGF or anti-EGFR agent, depending on RAS status and the location of the primary tumor. 8/10 patients received FDT/TPI in the fourth line. On average, they received three cycles of therapy. Response to therapy was assessed with imaging re-examination every 8 weeks based on the RECIST 1.1 criteria.

Results: Disease stability was observed in 60% of the patients, while one patient exhibited partial response. The median progression-free survival was 4.6 months (1-21 months). Adverse effects related to the therapy were observed in all patients, specifically neutropenia (7/10), anemia (4/10), thrombocytopenia (1/10), hepatotoxicity (1/10), and fatigue (9/10). Grade 3 toxicity was observed in 40% of the cases, 1 patient discontinued therapy due to toxicity, and no deaths were related to the therapy. Three patients received subsequent lines of therapy after FDT/TPI.

Conclusions: The increase in median survival of patients with metastatic colorectal cancer achieved in recent years with the efficacy of chemotherapeutic regimens in the first and second lines highlights the need for new therapeutic options in the subsequent management of these patients. FDT/TPI represents an effective option aiming at disease stabilization in the 3rd line of therapy and beyond. The combination with Bevacizumab offers an additional benefit of 3.3 months in the overall survival of these patients, as demonstrated in the SUNLIGHT trial.

HOLISTIC APPROACH AND SUPPORT FOR BREAST CANCER PATIENTS - SOCIAL NEED AND REQUIREMENT

Georgopoulos I., Chatzopoulos A., Mpirmpa D., Sideris P., Heras P.

Hellenic Medical Company Research of Psychosomatic Disorders

Aim: The purpose of this study was to record the individual supportive and rehabilitation needs, but also the expectations that should be met in the context of the operation of a center, whose target group are patients with breast cancer, as identified by people from the general public population.

Methods: 130 women, residents of Nafplio, aged 40-60, participated in the study. The sample was random, consisting of attendants of Nafplio Hospital patients. Participation was voluntary and anonymous. An improvised questionnaire and descriptive method were used.

Results: Out of the total of 130 respondents, 82 accepted to answer.

- The need for more specific medical information on the topic of breast cancer was expressed by 73.07%.
- For psychiatric and psychological support of sufferers: 61.53%
- For family support: 58.46%
- For information on work, diet and sexual activity of sufferers: 47.69%
- 62.3%: Getting to know-contact with people suffering from the same disease is important

Conclusions: The psychological support and rehabilitation of patients with breast cancer presupposes the meeting of specific needs, the satisfaction of which is a key point in the operation of a corresponding psychological and social support center.

POLYGENIC RISK SCORE (PRS) IN WOMEN WITH BREAST CANCER

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Introduction: Polygenic Risk Score (PRS) is the cumulative risk that results from a statistical model which incorporates a set of polymorphisms (SNPs) that are associated with the manifestation of a disease based on genetic association studies (GWAS). Breast cancer is the most common cancer of the female population.

Aim: The aim of this study is the calculation of PRS for 577,113 SNPs in women with breast cancer.

Methods: In 105 women with breast cancer, in whom had been preceded by genetic testing for 43 genes using next-generation sequencing (Next Generation Sequencing-NGS) was performed calculation of PRS for 577,113 SNPs. Of the 105 subjects, 44 subjects were negative for genetic testing, 20 had a pathogenic finding in a high penetrance genes for breast cancer, 20 and 18 patients who had a pathogenic finding in genes of moderate and low penetrance for breast cancer, respectively.

Results: PRS was estimated high in 34% of patients who had a negative result in genetic testing. Also, high PRS was calculated in individuals that carried a pathogenic finding in high risk genes (15%) and low risk genes (11%). Not calculated high PRS in subjects in whom a pathogenic finding was detected in moderate risk genes.

Conclusions: This is the first study in a Greek population calculation of PRS in women with breast cancer and known results from genetic testing. The PRS could help assess the risk of disease in those who are negative in genetic testing. Concurrently, pathogenic variants in genes of high and intermediate risk (20%) and PRS (34%) is estimated to explain to 54% of women the risk of developing breast cancer.

A RARE CASE OF IMMUNE-RELATED ESOPHAGITIS IN A PATIENT WITH NON SMALL CELL LUNG CANCER

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Introduction: Treatment with checkpoint inhibitors is associated with a wide range of immune-type adverse effects. Esophagitis is a rare adverse effect of immunotherapy, and related literature data are limited.

Aims and Scope: Presentation of a clinical case aimed at enriching the literature on immune-related esophagitis.

Methods: Case report.

Results: This case involves an 86-year-old male with stage IV adenocarcinoma of the lung, affecting the right upper lobe, with infiltration into the right pleura and associated pleural effusion, as well as liver metastases. Next Generation Sequencing Analysis (NGS) identified a Tumor Proportion Score (TPS) of 20% without actionable mutations. The patient's medical history is significant for arterial hypertension, coronary artery disease, and heavy smoking (40 pack/years). He was initiated on first-line therapy comprising a combination of chemotherapy (Carboplatin-Pemetrexed) and immunotherapy with Pembrolizumab. Upon restaging, he exhibited a partial response and proceeded with maintenance therapy with Pembrolizumab. After 8 cycles of maintenance therapy, he developed grade III skin toxicity, which was managed with systemic corticosteroids, topical treatments, and a temporary suspension of immunotherapy. Following the guidelines, immunotherapy was subsequently resumed. After the 19th cycle, he experienced dysphagia, with no accompanying symptoms or abnormal laboratory findings. An upper gastrointestinal (GI) endoscopy showed localized linear ulcers throughout the esophagus. Histopathology revealed hyperplastic polystyvotic squamous epithelium with both chronic and acute inflammatory elements in the stromal papillae and intraepithelially, with no evidence of herpes or CMV infection. Treatment with prednisolone at 1mg/kg for immunotherapy-induced esophagitis led to clinical improvement. A follow-up upper GI endoscopy 4 weeks later demonstrated mucogenic healing of the linear ulcers, confirmed histologically. The patient's corticosteroid dosage is being gradually reduced, and immunotherapy has been discontinued. At the latest restaging, he continues to show a partial response to treatment.

Conclusion: Immune-related esophagitis, though uncommon, should be included in the differential diagnosis for related symptoms. The vital role of interdisciplinary management in the diagnosis and treatment of immune-related adverse effects is underscored.

PEMBROLIZUMAB-LENVATINIB COMBINATION IN PATIENTS WITH METASTATIC UVEAL MELANOMA. A SINGLE CENTER EXPERIENCE

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Introduction: Uveal melanoma (UM) is the most common intraocular neoplasm in adults. BRAF/MEK targeted agents and immune checkpoint inhibitors have been successfully applied against cutaneous melanoma, but their efficacy against UM is limited. Combination of anti-PD-1 antibody pembrolizumab with the tyrosine kinase inhibitor lenvatinib has been shown to induce objective response rate of 21% against pretreated patients with metastatic cutaneous melanoma patients, in the single arm trial LEAP-004. Although, this regimen has not been adequately studied against UM.

Aim: To investigate tolerability and efficacy of pembrolizumab-lenvatinib combination in metastatic UM patients.

Methods: We had 3 female patients (median age: 57 years) with metastatic UM, between 2021-2023, treated with pembrolizumab (200mg q 3 weeks) with lenvatinib (20mg daily). Befrore pembrolizumab-lenvatinib, all three patients had received the approved treatment options (Ipilimumab,Nivolumab, Pembrolizumab, Deticene, embolization of hepatic lesions), and had presented with disease progression. Two patients had hepatic metastases, while lung and lymph node metastases were also present in 2/3 patients. LDH was elevated above upper limit of normal in only one patient.

Results: Patient No 1 improved clinically after 2 cycles of pembrolizumab-lenvatinib. Nonetheless, her condition deteriorated within 9 weeks from the regimen initiation. Patient No2 received the regimen as 4th line of treatment, achieving a considerable objective response in liver lesions and clinical amelioration at 12 weeks of treatment. Treatment was withdrawn due to gastrointestinal toxicity grade 3 after the 9th cycle of treatment, disease remaining stable. Due to following disease progression, the patient was started on niraparib (CDK4/6 inhibitor), as her tumor was found to carry loss of heterozygosity. Patient No3, is still under treatment with good tolerance. She is eligible to receive tebentafusp upon disease progression, as she carries an HLAA*02:01 positive histocompatibility complex. Main observed toxicities included arterial hypertension (grade 1) and diarrhea (grade 2).

Conclusions: Despite the small patient number, pembrolizumab-lenvatinib seems to be a promising regimen against heavily pretreated UM, as a well tolerated and effective treatment option.

EVALUATION OF BREAST CUPS USE IN A PATIENT SUBMITTED TO RADIOTHERAPY OF THE RIGHT BREAST: A CASE STUDY

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Introduction: Breast cancer is the most common malignancy cancer in the female sex. The usefulness of plastic breast cups (Breast Cups) which are necessary for women undergoing radiation therapy and having big chests.

Aim: The incident description submitted to complementary radiation therapy using a special plastic case, due to the large breast.

Methods: This is a case study of a 46-year-old female, who underwent surgery operation of a partial lumpectomy of the Right Breast in a big Hospital in Thessaly.

Results: Female patient 46 years old, non-smoker, suffering from porogenic invasive neoplasm
The right Breast was subjected to nodule lumpectomy (diameter 1.4 cm). Biopsy revealed invasive carcinoma Grade 1 with free invasive surgical margins. No metastases were found in the three removed sentinel lymph nodes. Biomarkers were positive for estrogen and progesterone, CerbB2: negative, and Ki-67: 5%. The patient was classified as stage I (TNM: T1cN0M0). Radiotherapy was performed with the IMRT method combined with IGRT in the right breast and then hormone therapies were recommended. The patient made a CT scan to be obtained the somatometric data for the preparation of the planned treatment. A special plastic breast sheath was applied for the immobilization and stable shaping of the breast for the entire treatment period. Treatment was started after they were confirmed with digital rotary and fixed images of the accuracy of the rays. The treatment is scheduled to be done using Director Multiple Sheets to limit the dose in the adjacent normal tissues. 30 sessions were performed with 6 MV energy photons with two fields daily, with a daily dose of 180 cGy and a schedule of five treatments per week. A total dose of 5400 cGy (97% isotonic curve) was delivered throughout the Right breast locally (without axillary and supraclavicular lymph nodes).

Conclusions: The high precision of the linear accelerator combined with the breast cups placed on the breast reduces the side effects on the neighboring tissues and organs (heart, lungs). Thus, it allows the radiation to be concentrated on its point volume without dispersing radiation doses to neighboring tissues

RARE METASTATIC LOCATION IN THE TESTIS FROM SMALL CELL LUNG CANCER

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Background: In most patients with small cell lung cancer, metastases are present since the initial diagnosis of the disease. The most common locations of metastases are in the lymph nodes, brain, liver, and bones. Testicular metastases are extremely rare. They usually occur in elderly patients with a peak incidence in the fifth and sixth decades of life, but they may also affect younger patients and should be differentiated from primary testicular tumors.

Case report: A 75-year-old patient presented with mild pain to the right upper quadrant of his abdomen in the last 7 days and also with weakness and weight loss of approximately 10 kg in 2-3 months. The physical examination revealed jaundice, palpable mass of the right upper quadrant, and a painless left testicular enlargement. Hepatic focal lesions were found in the abdominal ultrasound. In addition, CT scanning revealed a mass in the left lung with enlarged mediastinal lymph nodes, as well as multiple metastases to the liver, peritoneum, and left testicle. A biopsy taken during bronchoscopy had no evidence of malignancy, so a left orchiectomy was performed. The histopathological evaluation of the orchiectomy specimen showed the presence of small cell carcinoma, most likely originating from the lung. The patient started first-line therapy (carboplatin-etoposide) without any adverse effects.

Conclusions: Small cell lung cancer is known for its aggressive biological behavior. The testicles are an extremely rare metastatic location because of the blood-testis barrier and the lower body temperature. However, further evaluation is required when clinical and imaging indications are present.

SIGNIFICANT CLINICAL RESPONSE IN A PATIENT WITH GIST AND A RARE PDGFR-A MUTATION

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Background: Gastrointestinal stromal tumors are most commonly found in the stomach and small intestine, while cases of extra-gastrointestinal stromal tumors are rarer. The most common mutations in GIST tumors involve the c-KIT and PDGFR-A genes. Stromal tumors positive for the PDGFR-A D842V mutation (approximately 8% of GISTs) do not respond to imatinib or other tyrosine kinase inhibitors.

Case report: A 73-year-old patient with surgically removed GIST of the omentum had a disease recurrence with diffuse peritoneal implants one year after the surgery. The patient had not received any adjuvant therapy. Molecular testing was performed for treatment planning, which revealed a mutation of the PDGFR-A gene at position D842V on exon 18. This mutation leads to resistance to imatinib and other tyrosine kinase inhibitors. Based on clinical studies and guidelines, avapritinib was selected as first-line therapy at a dose of 400 mg daily. Avapritinib is a protein kinase inhibitor which responds to the above mutation. After the first month of treatment the patient showed clinical signs of disease response which were confirmed by imaging after 3 months. Apart from edema and nausea, the most important adverse effect was diarrhea, which was however well controlled. The patient continues treatment with avapritinib and on the latest imaging test has further response.

Conclusions: Tyrosine kinase inhibitors have significantly improved survival in patients with early and advanced GIST. However, molecular testing is necessary for treatment planning considering the presence of mutations such as PDGFR-A mutation at position D842V in exon 18 that is resistant to TKIs but responds to a novel agent, avapritinib.

IMMUNOSUPRESSION AND CANCER-A VICIOUS CYCLE

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Introduction: Common variable immunodeficiency (CVID) is the most common primary symptomatic immunodeficiency that includes a group of heterogeneous disorders with common features of hypogammaglobulinemia, impaired antibody production, and recurrent infections. In addition, coexistence with autoimmune diseases is common (about 30%) and the incidence of malignancies is increased compared to the general population.

Aim: Presentation of a patient with Common variable immunodeficiency and cancer.

Methods: A 48-year-old woman with severe hypogammaglobulinemia reports being sickly in childhood/adolescence. Her family anamnesis is negative for primary immunosuppression. The individual anamnesis states:

- 2006: treated with hydroxychloroquine and corticoids, due to lupus erythematosus.
- 2013: breast adenocarcinoma with metastatic foci in the lung, preceded by chemotherapy and then mastectomy.
- 2017: adenocarcinoma of the endometrium, underwent hysterectomy and hormone therapy.
- 2020: presented with multiple secondary osseous and liver metastases, despite continuing chemotherapy.

The laboratory tests showed: General blood test: WBC-6400/ML, neutrophils 4740/ML, lymphocytes 1170/ML, monocytes 300/ML, eosinophils 160/ML, basophils 30/ML, PLT 215000/ML, Hb 9.6 gr/dl, Hct 29.1%. Serum albumin electrophoresis: IgG 120mg/d, IgM 71.2mg/dl, IgA 310mg/dl, IgG1 65.5mg/dl, IgG2 38.8mg/dl, IgG3 8.0mg/dl, IgG4 3.2mg/dl, IgE <18.7 mg/dL. Other laboratory: anti-diphthera toxoid 0.005, anti-rubella IgG (-), anti-PCP 13.740, anti-tetanous toxoid IgG 0.032, CRP <0.3 mg/dL, C3 102, C4 23.5, RF<10.6, ANA (-), pANCA (-), cANCA (-), TSH 1,946 MIU/ml, anti-EBV IgG(-), anti-CMV IgG (+55.28). Pneumococcal vaccination followed and a lack of anti-PCP 18,396 antibody responses was noted. Bone marrow biopsy and karyotype of the bone marrow, without pathological findings. Peripheral blood immunophenotype: CD3+(T-lymphocytes) 95% (2014/ML), CD19 (B-lymphocytes) 2.1% (43/ML, normal value 100-500), NK-lymphocytes 2.7% (58ML normal value 70-350), NTK-lymphocytes 3.9% (84/ML), CD4+ 52.8% (1134 ML), CD8 385% (827 ML), Ratio T4/T8 1.37, TCR-Aβ 96.7%, TCR-Γ 3.3%. Genetic testing (TNFRSF13B/TACI, TNFRSF13C/BAFFR): no pathogenic mutations.

Results: Based on the above findings (severe hypogammaglobulinemia, severe B and NK lymphopenia, absence of antibody responses, autoimmunity) the patient was diagnosed with Common Multiple Immunodeficiency and received intravenous Γ-globulin replacement therapy. In 2021, she was infected with the COVID-19 virus and died.

Conclusions: It could be argued that immunosuppressive factors such as Common Multiple Immunodeficiency under multi-year immunosuppressive treatment and chemotherapy played an important role in the development of cancer and its resistance during treatment.

MAINTAINING COMPLETE RESPONSE WITH PARP INHIBITORS AFTER CHEMOTHERAPY IN RECURRENT OVARIAN CANCER

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Introduction: Ovarian cancer is a disease that in most women cannot be cured with chemotherapy and debulking surgery. The past years parp inhibitors given solely or in combination with bevacizumab based on the HRD status of the tumors is a treatment that can delay recurrence. An unanswered issue is when recurrence occurs whether debulking worth's being performed or instead starting chemotherapy and continuing with parp inhibitors even in brca wild type women and clinical trials are needed. The four cases below depict the possible cure women could get only by parp inhibitors.

Aim: The purpose of the present study was to assess the use of parp inhibitors as maintenance treatment after chemotherapy in recurrent ovarian cancer in order to maintain complete response.

Methods: Four young women were diagnosed with ovarian cancer (stage Ic-IIIc) disease. They had debulking surgery and received adjuvant chemotherapy. Unfortunately, these women had a platinum sensitive recurrence and since second surgery was not recommended at the multidisciplinary board, they started chemotherapy. After completing six cycles of chemotherapy a PET -CT was performed and there was complete resolution of their disease. All women received parp inhibitor as maintenance therapy.

	Age of diagnosis	Surgery	Adjuvant chemotherapy	Recurrence	Chemotherapy	Parp inhibitor
1	46	13/12/2019	Taxol carbo	07/2021	Cisplat-gem	niraparib
2	54	11/12/2018	Taxol-carbo	10/2021	Cisplat-gem	niraparib
3	43	20/11/2017	Taxol-carbo	08/2019	Cisplat-gem	niraparib
4	47	20/12/2018	Taxol-carbo	07/2020	Cisplat-gem	niraparib

Results: All women continue till now without recurrence. None of the women are BRCA positive and they receive their treatment with no severe complications. Two patients of our clinic receive niraparib for one year, while the other two patients receive niraparib for two and three years respectively.

Conclusions: Living the new era of precision medicine in oncology, and despite the fact that most women do not have a BRCA mutation or a high HRD score, a parp inhibitor can be prescribed to women offering a better survival.

CASE REPORT : AN UNUSUAL DIAGNOSIS OF EPITHELIOID HEMANGIOENDOTHELIOMA

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Introduction: Epithelioid hemangioendothelioma (EHE) is a rare malignant vascular neoplasm, with an incidence of 1 in 1 million. It arises from vascular pre-endothelial or endothelial cells and can occur anywhere in the body, with great variation in the clinical presentation.

Aim: The importance of this clinical case report is to highlight the unusual presentation of primary EHE as a pleural empyema.

Methods: We report the case of a 60 year old man, without any medical history, presenting to the hospital with acute chest pain and high fever with increased inflammation markers. The imaging findings showed different encysted pleural effusions that extended almost to the entire right hemithorax with some parts of atelectasis, without other parenchymal damage. Diagnostic thoracentesis showed fluid characteristics in favor of pleural empyema. Following the protocol of empyema treatment, drainage of the fluid with placement of a chest tube was followed. Pleural fluid cultures were all negative. Bronchoscopy disclosed inflammation and stenosis with pressure from outside the bronchial tree. The biopsy taken revealed primary EHE. The patient continued the treatment in his country of origin.

Results: Pulmonary epithelioid hemangioendothelioma presents with four main patterns in the chest imaging: 1. multiple pulmonary nodules (with or without ground glass) 2. reticular nodular pattern 3. diffuse pleural thickening 4. intraparenchymal lesion (nodule/mass) with pleural infiltration. The presence of pleural effusion is linked with the worst outcome. Surgical resection, when feasible, is the treatment of choice. Otherwise, chemotherapy/immunotherapy is preferred.

Conclusions: Due to the non-specific symptoms, the heterogeneity in the clinical picture and the limited literature, with the present case we want to raise the suspicion of hemangioendothelioma in any case of empyema, which cannot be attributed to other causes.

STRESS AND DEPRESSION IN PATIENTS WITH BREAST CANCER AND ACUTE MYOCARDIAL INFARCTION

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Aim: The purpose of this work was the comparative study of stressful life events, depression and anxiety between a group of 35 patients with breast cancer (group A) and another group of patients with acute myocardial infarction (group B).

Methods: The research protocol included the Holmes Life Events Questionnaire and Rahe, the Montgomery and Asberg depression scale, and his anxiety scale Hamilton.

Results: From the preliminary results it was shown that there is a statistically significant difference in the anxiety scales ($p=0.02$), with the group of patients with breast cancer being higher. In contrast, they did not show any statistical difference between the two groups regarding. The number of life events and subjective emotional impact.

Conclusion: The impact of life events on the level of the psyche is not only a function of their objective dimension, but also of the way in which the psyche processes them. The greater level of anxiety and depression in breast cancer patients, despite the fact that the number of events and their emotional impact are almost identical, is indicative of this diversity at the level of mental processing.

CASE REPORT: CONVERTION OF SQUAMOUS CELL STAGE. IV LUNG CARCINOMA IN LARGE CELL NEUROENDOCRINE DURING ANTI PD-1 THERAPY

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Introduction: Squamous cell carcinoma of the lung is 30% of NSCLCs. A special subpopulation is patients overexpressing PD-L1 in cancer he cells (CPS >/= 50%). That is because there is a special concern about selection of the optimal therapeutic approach, monotherapy with immunotherapy or a combination of chemo-immunotherapy. Also, there is a special interest in the mechanisms of development resistance to immunotherapy but also to subsequent treatment options.

Case presentation: 81-year-old patient diagnosed with stage IV squamous cell lung cancer cells with CPS score: 90%. He received Pembrolizumab as 1st line treatment for 15 cycles with good tolerance, whereas then showed disease progression with new-onset multiple liver foci. A biopsy was performed by the last lesion. The biopsy demonstrated a neuroendocrine carcinoma from large cells. The patient received 2nd line therapy with Carboplatin/Etoposide for a total of 6 cycles. There was disease stabilization in imaging. However, the patient clinically was in liver failure and died 20 days after the decision for supportive care only.

Aim: The reference of this case report intends in the highlighting of main issues concerning lung neoplasms and especially in patients whose tumors overexpress PD-L1. The choice of 1st line treatment (immunotherapy monotherapy or combination with chemotherapy) and the importance of histological identification of new lesions in these patients are not clearly defined by the guidelines so far.

Results/Conclusions: The expression of PD-L1, combined with factors such as PS and the patient's comorbidities are what will determine the treatment plan in patients with squamous lung cancer. Also biopsy of new lesions emerges as of utmost importance for optimal further treatment of the disease.

MICROSCOPIC HEMATURIA IN AN UNDIAGNOSED ONCOLOGIC PATIENT

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Introduction: Medical History: A 65-year-old male patient visited the Nikea Primary Healthcare Center, Pireus, Greece, referred by the family doctor, for routine examination. Patient history revealed arterial hypertension, hypercholesterolemia, heavy smoking, weakness and fatigue during the last year, frequent urination and occasionally pain in the lumbar spine.

Methods: The laboratory performed complete blood count at the NIHON KOHDEN CelltacG MEK 9100 haematology analyser, serum biochemical tests at the KONELAB 60 biochemistry analyzer and urinalysis by means of Multistix 10 SG Reagent Strips, Siemens Healthineers method.

Results: the laboratory tests revealed: orthochromatic anemia, PLT count 310x10^3/ML and normal leukocyte differential count, as well as elevated levels of urea, creatinine, uric acid, total cholesterol and triglycerides. Microscopic examination of the urine sediment revealed abundance of glomerular erythrocytes. Urinalysis was performed twice, with new urine sample, however, the result was the same. The patient was admitted for imaging testing and the results were negative for neoplasm. Urinalysis was repeated after 9 months and the result was similar to the previous one. Moreover, the patient visited the emergency department of a tertiary hospital due to pain in the lumbar and abdominal region. After a detailed examination, a urothelial carcinoma - transitional cell carcinoma, was diagnosed and the patient underwent a nephroureterectomy.

Conclusions: Transitional cell carcinoma accounts for around 95% of bladder cancers and is the 4th most common cancer among men. Moreover, it accounts for 5–10% of all urothelial malignancies. The aforementioned case reveals the importance of the routine urinalysis, as an early diagnostic tool in the diagnosis of urinary tract cancer, as well as the importance of primary health care, in the early detection of such pathologies and the timely admission of the patients to the relevant specialists.

ONCOLOGIC PATIENT INFECTED BY MULTI-RESISTANT STRAIN OF ENTEROBACTER CLOACAE IN URINE

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Introduction: Medical History: A 78-year-old male patient visited the Nikea Primary Healthcare Center, Pireus, Greece, referred by the family doctor (GP), for routine urine testing and urine culture. Patient history revealed dementia, diabetes mellitus type 2, arterial hypertension, hypercholesterolemia, hypertriglyceridemia, heavy smoking and history of recurrent urinary tract infections with intermittent miscoscopic hematuria. Moreover, it revealed urothelial papilloma of the urinary bladder, treated with electrocautery of the papillomas, as well as a subsequent biopsy.

Methods: The laboratory performed urinalysis (Multistix 10 SG Reagent Strips, Siemens Healthineers) and urine culture (incubation at 37^0 C for 24 hours on MacConkey agar, Columbia blood agar and Sabouraud dextrose agar).

Results: Urinalysis showed intense pyuria, micro-organisms and red blood cells. The urine culture grew monomicrobial *Enterobacter cloacae* $>10^5$ CFU/ml. The bacterium was identified by the RapID REMEL ONE identification system (Thermo Fisher Scientific). Antimicrobial susceptibility testing revealed susceptibility to Colistin and Imipenem.

Conclusions: *Enterobacter cloacae* is a gram negative bacterium. Over the past decades, it has emerged as one of the most common pathogens, infecting patients with underlying diseases, immunosuppression and prolonged hospital stay. It causes sepsis, urethritis, and lower respiratory tract infections. The patient was admitted to the urology department of a tertiary hospital, where he received a special intravenous antimicrobial treatment, because of the multidrug-resistance of *Enterobacter cloacae*.

A CASE OF ACUTE CORONARY VASOSPASM DUE TO OXALIPLATIN

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Introduction: Oxaliplatin is one of the most commonly used chemotherapeutic drugs in colorectal cancer. Many studies have shown that it can cause neuropathy as it affects the Na channels, leading to their hypersensitivity. However, coronary artery spasm during oxaliplatin administration has rarely been described in the literature.

Aim: To present a case of a 67-year-old female patient with metastatic colorectal cancer who experienced acute coronary syndrome due to coronary artery spasm during oxaliplatin administration.

Case Presentation: The patient, with an insignificant medical history, was diagnosed with left colon cancer (all RAS and BRAF wild type, MSS) with liver metastases (stage IV) in August 2022. She was initiated on chemotherapy with the mFOLFOX6 + Panitumumab regimen, tolerating the treatment well and showing partial response (PR) after 3 months of therapy. During the 8th cycle of treatment, the patient complained of intense atypical lumbar pain with reflection to the upper back during the oxaliplatin administration. The infusion was immediately stopped and she was managed with intravenous hydrocortisone and dimetindene. Electrocardiogram (ECG) showed a 1 mm ST-segment elevation in leads I, aVl, V5, V6, and laboratory examinations revealed elevated myocardial enzymes (troponin T: 320 pg/ml, normal range: 0-48). The patient was admitted for further evaluation. Echocardiography revealed an ejection fraction of 55%, mild diastolic dysfunction, minor mitral and tricuspid regurgitation, without segmental hypokinesis. A slight increase in troponin to 450 pg/ml was noted 48 hours post-admission, without further episodes of pain. Coronary angiography found no significant abnormalities. She was conservatively managed as having experienced an acute coronary vasospasm, treated with metoprolol and transdermal nitroglycerin. Two months post-discharge, the patient remains asymptomatic of cardiac issues and continues her chemotherapy regimen with capecitabine and panitumumab.

Conclusion: While oxaliplatin is a key therapeutic agent for colorectal cancer, its association with acute cardiac events is rarely reported. The specific mechanism behind oxaliplatin-induced cardiovascular toxicity needs further exploration.

PANCREATIC METASTASES FROM SMALL CELL LUNG CARCINOMA- A DIAGNOSTIC AND TREATMENT CHALLENGE FOR THE MEDICAL ONCOLOGIST: THREE INTERESTING CASE- REPORTS

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Introduction: The metastatic lesions of the pancreas are rare and constitute approximately 2% of the organ's malignancies. Pancreatic metastases from lung cancer are even more uncommon (<0.3%) and are often accompanied by metastases in other organs. Their diagnosis and treatment are a challenge for the medical oncologist.

Aim: The presentation of three interesting cases of small cell lung cancer with pancreatic metastases and their diagnostic and treatment algorithm.

Methods: Review and presentation of the particular characteristics of three (3) patients diagnosed with small cell lung cancer metastatic to the pancreas.

Results: The three patients, two men (A, B) and one woman (C), with a smoking history, were diagnosed with small cell lung cancer at 71 (A), 60 (B), and 67 (C) years old, respectively. Patients A and B were initially diagnosed with limited disease, while patient C was de novo metastatic. During the course of their disease, a number of completely asymptomatic lesions, constantly increasing in size, appeared in the pancreas. In patients A (single lesion) and C (two lesions) an endoscopic ultrasound and biopsy of the lesions were performed and the diagnosis of metastatic infiltration of the organ was confirmed. In patient B, the biopsy is still pending, however the specific metabolic and morphological characteristics of the lesions confirm the presence of two pancreatic metastases. All of the patients have received a combination of immunotherapy and chemotherapy, while currently one of them has died (patient A). His median survival after the diagnosis of pancreatic disease was 19 months.

Conclusions: The improvement of imaging methods leads to a greater sensitivity in the diagnosis of pancreatic metastases from primary small cell lung cancer. However, their presence is often accompanied by the existence of metastases in other organs, as well. The biopsy of the lesion for diagnostic purposes is essential as early as possible; nonetheless, the diagnosis is usually accompanied by a poor prognosis.

MULTIRESISTANT KLEBSIELLA PNEUMONIAE IN URINE CULTURE OF ONCOLOGIC PATIENT

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Introduction: Medical History: A 88-year-old female patient visited the Nikea Primary Healthcare Center, Pireus, Greece, referred by the family doctor, for routine urine testing and urine culture. Patient history revealed dementia, diabetes mellitus type 2, arterial hypertension, hypercholesterolemia, hypertriglyceridemia, former heavy smoking and history of recurrent urinary tract infections. Moreover, it revealed intermittent vaginal bleeding during the last three years, localized pelvic pain, frequent urination, weakness and fatigue, loss of appetite and weight loss.

Methods: The laboratory performed urinalysis (Multistix 10 SG Reagent Strips, Siemens Healthineers) and urine culture (incubation at 37^0 C for 24 hours on MacConkey agar, Columbia blood agar and Sabouraud dextrose agar).

Results: Urinalysis showed intense pyuria, micro-organisms and red blood cells. The urine culture grew monomicrobial *Klebsiella pneumoniae* $>10^5$ CFU/ml. The bacterium was identified by the RapID REMEL ONE identification system (Thermo Fisher Scientific). Antimicrobial susceptibility testing revealed susceptibility to Colistin and Imipenem.

Conclusions: *Klebsiella pneumoniae* is a gram negative bacterium and is one of the most prevalent bacteria that cause pneumonia, urinary tract infections, as well as nosocomial infections, particularly in critically ill patients. Multi-drug-resistant *Klebsiella pneumoniae* has become an urgent risk to public health in recent decades. The aforementioned patient was admitted to a tertiary hospital, where she was diagnosed with uterine cancer and urinary tract cancer. Due to the infection with a multi-resistant strain of *Klebsiella pneumoniae*, she received special intravenous antimicrobial treatment. Following this, she was recommended a specific chemoprophylaxis per os for 6 months.