

Cancer Symptoms and causes Research Literatures

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Abstract: Cancer is the general name for a group of more than 100 diseases. Although there are many kinds of cancer, all cancers start because abnormal cells grow out of control. Untreated cancers can cause serious illness and death. The body is made up of trillions of living cells. Normal body cells grow, divide, and die in an orderly fashion. During the early years of a person's life, normal cells divide faster to allow the person to grow. After the person becomes an adult, most cells divide only to replace worn-out or dying cells or to repair injuries. This article introduces recent research reports as references in the related studies.

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1. Introduction

Cancer is the general name for a group of more than 100 diseases. Although there are many kinds of cancer, all cancers start because abnormal cells grow out of control. Untreated cancers can cause serious illness and death. The body is made up of trillions of living cells. Normal body cells grow, divide, and die in an orderly fashion. During the early years of a person's life, normal cells divide faster to allow the person to grow. After the person becomes an adult, most cells divide only to replace worn-out or dying cells or to repair injuries.

The following introduces recent reports as references in the related studies.

Abu-Odah, H., et al. (2022). "Psychological distress and associated factors among Palestinian advanced cancer patients: A cross-sectional study." *Front Psychol* **13**: 1061327.

OBJECTIVE: There is limited research exploring the experiences of people living with advanced cancer in the Gaza Strip (GS), Palestine. Thus, this study aimed to determine the level of psychological distress, anxiety, and depression among advanced cancer patients in the GS and identify factors associated with a high level of distress. **MATERIALS AND METHODS:** A secondary analysis was performed using primary data from a larger study focusing on supportive care needs in advanced cancer patients in GS. Three hundred sixty-one patients agreed to participate and filled out the Distress Thermometer (DT) and the Hospital Anxiety and Depression Scale (HADS). Multivariate logistic regression was conducted to identify factors associated with high distress levels. **RESULTS:** Over two-thirds of advanced cancer patients (70.6%) reported a high level of distress. They also reported a significantly higher distress level than patients with

early cancer (96.5 vs. 3.5%; $p = 0.001$). About 92.8% of participants reported depression and anxiety symptoms. Physical, emotional, and practical problems were the primary sources of distress. Breast cancer patients were more likely to have psychological distress than colon and stomach cancer patients. Newly diagnosed patients had a higher level of anxiety, depression, and distress than those who had a cancer diagnosis for an extended period. **CONCLUSION:** Patients with advanced cancer in the GS exhibited a significantly higher level of psychological distress, depression and anxiety than patients with advanced cancer elsewhere. Efforts should be made to identify psychological distress as a routine part of oncology practice. Future research should further explore the causes of psychological distress in cancer patients in conflict zones and feasible mitigation strategies.

Alandonisi, M. M., et al. (2023). "Characteristics of Emergency Visits Among Lung Cancer Patients in Comprehensive Cancer Center and Impact of Palliative Referral." *Cureus* **15**(4): e37903.

INTRODUCTION: During the treatment course, cancer patients are prone to develop acute symptoms that are either treatment-related or cancer-related. Emergency services are available during the whole day to manage the acute problems of patients with chronic diseases, including cancer patients. Previous studies have shown that palliative care (PC) provided at the beginning of stage IV lung cancer diagnosis helped to reduce emergency visits and increase survival rates. **METHOD:** A retrospective study was conducted on lung cancer patients with confirmed histopathology of non-small cell cancer and small cell lung cancer who visited the emergency department (ED) from 2019 to 2021. The demographic data, disease-related-data causes of ED visits (including disposition), number of emergency

visits, and palliative referral and impact on the outcome and frequency of emergency visits were reviewed. RESULTS: Of a total number of 107 patients, the majority were male (68%), the median age was 64 years old, and almost half of them were smokers (51%). More than 90% of the patients were diagnosed with non-small cell lung cancer (NSCLC), more than 90% with stage IV, and a minority underwent surgery and radiation therapy. The total number of ED visits amounted to 256, and 70% of the reasons for ED visits were respiratory problems (36.57%), pain (19.4%), and gastrointestinal (GI) causes (19%), respectively. PC referral was performed only for 36% of the participants, but it had no impact on the frequency of ED visits (p -value > 0.05). Besides, the frequency of ED visits had no impact on the outcome (p -value > 0.05), whereas PC had an impact on the live status (p -value < 0.05). CONCLUSION: Our study had similar findings to another study regarding the most common reason for ED visits among lung cancer patients. Improving PC engagement for patient care would render those reasons preventable and affordable. The palliative referral improved survival among our participants but had no impact on the frequency of emergency visits, which may be due to the small number of patients and the different populations included in our research. A national study should be conducted to obtain a larger sample and to determine the impact of PC on ED visits.

Al-Azri, M. and H. Al-Awaisi (2022). "Exploring causes of delays in help-seeking behaviours among symptomatic Omani women diagnosed with late-stage breast cancer - A qualitative study." *Eur J Oncol Nurs* **61**: 102229.

PURPOSE: Breast cancer (BC) is the most commonly diagnosed cancer in Oman; however, the majority of women are diagnosed at a relatively young age and late stage. Delays in BC diagnosis may be attributable to patient-related barriers to medical help-seeking, such as embarrassment arising from breast examinations or negative perceptions of cancer or a cancer diagnosis. Identifying and addressing patients-related barriers to medical help-seeking may help early BC detection, increase the survival rate, and improve prognosis. This study aimed to explore causes of delays in medical help-seeking behaviours among symptomatic Omani women diagnosed with late-stage BC. METHODS: Purposeful sampling was used to identify Omani women diagnosed with late-stage BC (i.e., stages III or IV) at the two main referral oncology centres in Oman. Semi-structured individual interviews were utilised to collect data regarding the participants' reasons for delaying seeking medical help. The

qualitative framework analysis approach was used for data analysis. RESULTS: A total of 17 women participated in the study. The mean age was 41.94 +/- 7.87 years (range: 27-56 years). Six reasons for delays in seeking medical help were identified, including: (1) Being in denial of BC symptoms; (2) normalisation of BC symptoms attributed to hormonal changes, dietary changes, or work-induced stress; (3) misinterpretation of BC symptoms attributed to other diseases or expectation of more alarming/obvious BC symptoms; (4) pursuit of alternative medicine remedies; (5) false reassurance or incorrect advice from family members or friends; and (6) practical barriers, such as childcare responsibilities and lack of access to transport. CONCLUSION: Several reasons were identified for delays in seeking medical help for BC symptoms, including cultural and emotional factors and a lack of knowledge of BC symptoms. Increased awareness of BC symptoms and a better understanding of Omani women's beliefs, cultures, and behaviours may help to reduce delays in BC presentation and diagnosis.

Alharbi, K. S., et al. (2022). "PI3K/Akt/mTOR Pathways Inhibitors with Potential Prospects in Non-Small-Cell Lung Cancer." *J Environ Pathol Toxicol Oncol* **41**(4): 85-102.

Lung cancer is the leading cause of cancer-related mortality across the globe. The most prevalent pathological form of lung cancer is non-small-cell lung cancer (NSCLC). Elevated stimulation of the PI3K/Akt/mTOR pathway causes a slew of cancer-related symptoms, making it a promising target for new anticancer drugs. The PI3K/Akt/mTOR path is involved extensively in carcinogenesis and disease advancement in NSCLC. Several new inhibitors targeting this pathway have been discovered in preclinical investigations and clinical trials. The etiology and epidemiology of NSCLC and biology of the PI3K/Akt/mTOR cascade and its role in NSCLC pathogenesis have all been discussed in this article. In this article, we've reviewed PI3K/Akt/mTOR cascade inhibitors that have been proven in vitro and in preclinical trials to be effective in NSCLC. Drugs targeting the PI3K/Akt/mTOR path in the treatment of NSCLC were also addressed. A better knowledge of the underlying molecular biology, including epigenetic changes, is also critical to detecting relevant biomarkers and guiding combination methods. Additionally, improved clinical trial designs will increase the capacity to test novel drugs and combinations for accounting for genomic variation and eventually improve patient outcomes.

Alshehri, S., et al. (2022). "Secondary Psychosis Following Neoadjuvant AC-T Chemotherapy for

Triple-Negative Breast Cancer: Case Report and Literature Review of Psychosis Postchemotherapy." *Case Rep Psychiatry* **2022**: 4939219.

Triple-negative breast cancer is a unique subtype among breast cancers. Management includes a neoadjuvant chemotherapy regimen. Psychiatric complications of the regimen have not been reported before. We present a case of acute psychosis after the second cycle of chemotherapy in a 42-year-old woman with triple-negative breast cancer. The patient presented with sudden irritability, agitation, disorganization in speech and behavior, and paranoia involving her coworkers conspiring against her and causing her trouble with the law for 4 days. She was in her usual state of health until after her second cycle of chemotherapy. This was the first presentation of psychotic symptoms in her life. She was conscious and oriented. There were no neurologic deficits. She denied any change in her mood and any features of hallucinations. She was uncooperative, restless, had flight of ideas, and persecutory delusions. The remainder of the examination was normal. An autoimmune process, nervous system infection, or psychosis secondary to the chemotherapy were suspected. Serum electrolytes and other biochemical parameters were normal. Imaging of the brain showed no signs of acute brain insults or intracranial metastasis. Cerebrospinal fluid analysis and culture showed no abnormality or growth. The work-up revealed that neurologic, infectious, or autoimmune causes of her psychotic symptoms were less likely. Thus, a diagnosis of psychosis secondary to chemotherapy was considered. Treatment was with paliperidone, risperidone, clonazepam, and sertraline. Over the course of treatment, she showed substantial improvement and completed all of the chemotherapy sessions without adverse effects. In summary, we report a case of a patient whose initial chemotherapy course was complicated by psychosis. Since the neurotoxic and psychiatric effects of chemotherapeutics are not yet sufficiently elucidated, our case emphasizes that early signs of behavioral changes in patients receiving chemotherapy should trigger comprehensive psychiatric evaluation and monitoring of the patient's mental state.

Amala Dev, A. R. and J. Sonia Mol (2023). "Citrus Essential Oils: A Rational View on its Chemical Profiles, Mode of Action of Anticancer Effects/Antiproliferative Activity on Various Human Cancer Cell Lines." *Cell Biochem Biophys* **81**(2): 189-203.

Cancer is a complex genetic disorder due to uncontrolled growth of abnormal cells in the body, causes damage to the immune system, and may lead

to life-threatening situations. Common approaches to cancer treatment includes chemotherapy, hormone therapy, immunotherapy, radiation therapy etc. Development of novel and natural chemotherapeutic agents is highly demanded because of the side effects of synthetic drugs. Essential oils from aromatic plants exhibited antioxidant, antimutagenic, antiproliferative and immunomodulating activities. Mechanism of multidrug resistance and synergistic action of these volatile constituents are responsible for their chemopreventive properties. These oils primarily comprising of terpenoid constituents and are characterized by volatility, aroma, low molecular weight etc. The chemical composition of these oils varies depending on the environmental condition, species, plant part and geographical region. Literature analysis revealed that plant essential oils play an important role in cancer prevention and treatment. Cancer patients exposed to essential oils via inhaler devices were found to have less anxiety, stress, and nausea and insomnia. Nowadays, there is an increasing demand for investigating the biological properties of aromatic plants due to their availability, chemical diversity, and low toxicity. In aromatherapy, Citrus essential oils repress cancer related pain and enhance immune system. Current review summarizes existing variability of the chemical composition of Citrus essential oils and its molecular level anticancer mechanism against various human cancer cell lines. Citrus essential oils enhance cytotoxicity, antiproliferative and apoptotic behavior of cancer cell lines. Since essential oils exhibiting significant anticancer potential is worthy of further investigation for cancer chemoprevention. The findings of various research activities can be exploited by cancer researchers world wide for the development of anticancer drugs which can relieve cancer symptoms.

Amiama-Roig, A., et al. (2023). "Should We Expect an Increase in the Number of Cancer Cases in People with Long COVID?" *Microorganisms* **11**(3).

The relationship between viral infections and the risk of developing cancer is well known. Multiple mechanisms participate in and determine this process. The COVID-19 pandemic caused by the SARS-CoV-2 virus has resulted in the deaths of millions of people worldwide. Although the effects of COVID-19 are limited for most people, a large number of people continue to show symptoms for a long period of time (long COVID). Several studies have suggested that cancer could also be a potential long-term complication of the virus; however, the causes of this risk are not yet well understood. In this review, we investigated arguments that could support or reject this possibility.

Ankita, B., et al. (2022). "Investigation on Antimicrobial, Antioxidant, and Anti-cancerous activity of *Agaricus bisporus* derived beta-Glucan particles against cervical cancer cell line." *Cell Mol Biol (Noisy-le-grand)* **68**(9): 150-159.

Cervical cancer is one of the leading causes of death among women. Due to incomplete knowledge and hidden symptoms, it is not easily diagnosable. After the diagnosis of cervical cancer at an advanced stage, treatment such as chemotherapy and radiation therapy become too much costly along with having many side effects such as hair loss, loss of appetite, nausea, tiredness, etc. beta-Glucan does a novel polysaccharide has many immunomodulatory properties. In our research, we have tested the efficacy of *Agaricus bisporus* derived beta-Glucan particles (ADGPs) as an antimicrobial, antioxidant and anticancer agent against the cervical cancer HeLa cells. Prepared particles were quantified for carbohydrate content by anthrone test and further HPTLC analysis to confirm the polysaccharide nature and 1,3 glycosidic linkages of beta-Glucan. ADGPs were found to have efficient antimicrobial activity against various fungal and bacterial tested strains. DPPH assay confirmed the antioxidant activity of ADGPs. Cell viability was assessed against the cervical cancer cell line by using the MTT and IC50 was found at 54µg/ml. Furthermore, beta-Glucan was found to induce a significant amount of ROS, leading to the apoptosis of cells. The same was also assessed with the help of Propidium Iodide (PI) staining. With the help of JC-1 staining, beta-Glucan was found to disrupt the Mitochondrial Membrane Potential (MMP), ultimately resulting in the cancer cell HeLa death. Based on our experimental findings, we found that ADGPs can be proven as an efficient therapy for cervical cancer treatment and work as an antimicrobial and antioxidant agent.

Aziz, M. H., et al. (2022). "Fat-Soluble Vitamin Deficiencies and Disruption of the Immune System in Pancreatic Cancer: A Vicious Cycle." *Pancreas* **51**(8): 923-929.

Pancreatic ductal adenocarcinoma (PDAC) is currently an increasing contributor to cancer-related mortality. Despite advances in cancer treatment, PDAC survival rates have remained roughly unchanged over the years. Specifically, late diagnosis and insensitivity to currently available therapeutic regimens have been identified as the main causes for its poor survival. Pancreatic exocrine insufficiency (PEI) is a typical complication associated with PDAC diagnosis and pancreatic surgery. Pancreatic exocrine insufficiency, a major contributor to maldigestion in PDAC, is often not treated because it remains undetected because of lack

of overt signs and symptoms. In this review, we will focus on the major consequences of PEI, including the inadequacy of lipase excretion, which results in deficiency of fat-soluble vitamins. Because PDAC is known for its immune-high jacking mechanisms, we describe key features in which deficiencies of fat-soluble vitamins may contribute to the aggressive biological behavior and immune evasion in PDAC. Because PEI has been shown to worsen survival rates in patients with PDAC, detecting PEI and the related fat-soluble vitamin deficits at the time of PDAC diagnosis is critical. Moreover, timely supplementation of pancreatic enzymes and fat-soluble vitamins may improve outcomes for PDAC patients.

Benelhaj, N. E., et al. (2022). "Cancer patients' experiences of the diagnosis and treatment of incidental pulmonary embolism (a qualitative study)." *PLoS One* **17**(10): e0276754.

BACKGROUND: The diagnosis of symptomatic cancer-associated thrombosis often causes distress and alarm for patients, especially for those unaware of the risk, or the signs and symptoms to look out for. There are few data about cancer patients' experiences of incidentally diagnosed pulmonary embolism (IPE), where lack of warning (recognised signs, symptoms) may cause delayed diagnosis and aggravate distress. **OBJECTIVES:** To explore cancer patients' experience of the diagnosis of and living with incidental pulmonary embolism treated with anticoagulation. **METHODS:** A qualitative study using modified grounded theory approach. Semi-structured interviews were conducted as part of a mixed- methods prospective observational survey study of consenting patients with IPE. Data were subjected to thematic analysis. The qualitative findings are presented. **FINDINGS:** Eleven participants were interviewed (mean age 68.3 years, range 38-82 years; various forms of cancer and stages). Three major themes and one cross-cutting theme were generated. Theme (1): IPE is experienced in the context of cancer and concomitant comorbidities. Issues are understood in the shadow of-and often overshadowed by-current serious illness. Theme (2): Being diagnosed with IPE. Misattribution to cancer or other comorbidities caused delay in help-seeking and diagnosis. Theme (3): Coping with anticoagulation. Participants' incorporated anticoagulation treatment and its effects into their daily routine with acceptance and stoicism. Finally, the cross-cutting theme relates to a lack of information and uncertainty, contributing to distress throughout the experience. **CONCLUSION:** The diagnosis of IPE was upsetting and unexpected. Expert and timely information was valued by those

with IPE. Education called for about the increased risk of cancer-associated thrombosis and the signs and symptoms to be aware of.

Biswas, B., et al. (2023). "Navigating patient journey in early diagnosis of lung cancer in India." *Lung India* **40**(1): 48-58.

Lung cancer (LC) is one of the leading causes of cancer deaths worldwide. In India, the incidence of LC is increasing rapidly, and a majority of the patients are diagnosed at advanced stages of the disease when treatment is less likely to be effective. Recent therapeutic developments have significantly improved survival outcomes in patients with LC. Prompt specialist referral remains critical for early diagnosis for improved patient survival. In the Indian scenario, distinguishing LC from benign and endemic medical conditions such as tuberculosis can pose a challenge. Hence, awareness regarding the red flags-signs and symptoms that warrant further investigations and referral-is vital. This review is an effort toward encouraging general physicians to maintain a high index of clinical suspicion for those at risk of developing LC and assisting them in referring patients with concerning symptoms to specialists or multidisciplinary teams as early as possible.

Bonilla, M., et al. (2022). "Hypomagnesemia in Patients With Cancer: The Forgotten Ion." *Semin Nephrol* **42**(6): 151347.

Magnesium is crucial for various cellular and enzymatic processes, yet it often is overlooked or underappreciated. Hypomagnesemia, a deficiency of magnesium in the blood, is a frequent problem in cancer patients and can lead to severe symptoms and morbidity. In this review, we provide an in-depth analysis of the physiology and regulation of magnesium, and signs and symptoms of hypomagnesemia in cancer patients. We also examine the causes and mechanisms of magnesium imbalances in cancer patients, specifically focusing on cancer-specific therapies that can lead to hypomagnesemia. Finally, we provide updates on the management of hypomagnesemia, including oral and parenteral supplementation, as well as the role of drugs in cases that are resistant to treatment. This review aims to raise awareness among health care providers caring for cancer patients about the significance of monitoring magnesium levels in cancer patients and function as a guide. Future clinical studies should focus on magnesium monitoring, its impact on cancer progression, and its potential for preventing acute kidney injury.

Cai, T., et al. (2023). "Identification of age differences in cancer-related symptoms in women undergoing chemotherapy for breast cancer in China." *BMC Womens Health* **23**(1): 100.

BACKGROUND: Both contextual and cancer-related factors could be identified as causes of the interindividual variability observed for symptoms experienced during breast cancer treatment with chemotherapy. Understanding age differences and the predictors of latent class memberships for symptom heterogeneity could contribute to personalized interventions. This study aimed to identify the role of age differences on cancer-related symptoms in women undergoing chemotherapy for breast cancer in China. **METHODS:** A cross-sectional survey was conducted among patients with breast cancer in three tertiary hospitals in central China between August 2020 to December 2021. The outcomes of this study included sociodemographic and clinical characteristics, Patient-Reported Outcomes Measurement Information System (PROMIS)-57 and PROMIS-cognitive function short form scores. **RESULTS:** A total of 761 patients were included, with a mean age of 48.5 (SD = 11.8). Similar scores were observed across age groups for all symptoms except for fatigue and sleep disturbance domains. The most central symptoms varied among each group, and were fatigue, depression, and pain interference for the young-aged, middle-aged, and elderly-aged groups, respectively. In the young-aged group, patients without health insurance (OR = 0.30, P = 0.048) and in the fourth round of chemotherapy or above (OR = 0.33, P = 0.005) were more likely to belong to low symptom classes. In the middle-aged group, patients in menopause (OR = 3.58, P = 0.001) were more likely to belong to high symptom classes. In the elderly-aged group, patients with complications (OR = 7.40, P = 0.003) tended to belong to the high anxiety, depression, and pain interference classes. **CONCLUSIONS:** Findings from this study indicated that there is age-specific heterogeneity of symptoms present for Chinese women being treated for breast cancer with chemotherapy. Tailored intervention should consider the impact of age to reduce patients' symptom burdens.

Cano-Valderrama, O., et al. (2023). "Has the COVID-19 pandemic changed the clinical picture and tumour stage at the time of presentation of patients with colorectal cancer? A retrospective cohort study." *Cir Esp (Engl Ed)* **101**(2): 90-96.

INTRODUCTION: Treatment of patients with Coronavirus Disease 2019 (COVID-19) has affected the management of patients with colorectal cancer (CRC). The aim of this study was to compare

the diagnosis delay, symptoms, and stage of patients with CRC during the pandemic with a control cohort. **MATERIAL AND METHODS:** Patients referred to the CRC multidisciplinary team between September 2019 and January 2020 (cohort 1, control group) were compared with those who presented between September 2020 and March 2021 (cohort 2, pandemic group). **RESULTS:** 389 patients were included, 169 in cohort 1 and 220 in cohort 2. No differences were observed in the main characteristics of the patients. CRC screening and anaemia were the most common causes leading to the diagnosis of the tumour in cohort 1 and 2, respectively ($p < 0.001$). Diagnostic and therapeutic delay was longer in cohort 2 [6.4 (95% CI 5.8-6.9) vs. 4.8 (95% CI 4.3-5.3) months, $p < 0.001$]. More patients required non-elective treatment in the pandemic cohort (15.5% vs. 9.5%, $p = 0.080$). The tumour stage was more advanced in patients in cohort 2 [positive nodes in 52.3% vs. 36.7% ($p = 0.002$), and metastatic disease in 23.6% vs. 16.6% ($p = 0.087$)]. **CONCLUSION:** CRC patients in the pandemic cohort had a longer diagnostic and therapeutic delay and less patients were diagnosed because of CRC screening. In addition, patients with CRC during the pandemic needed non-elective treatment more frequently than patients in the control cohort, and their tumour stage tended to be more advanced.

Chen, W. S., et al. (2023). "Lactate Dehydrogenase and Risk of Readmission with Gastric Cancer: A Propensity Score Matching Analysis." *J Invest Surg*: 2172488.

PURPOSE: Readmission is one of the measures of quality of care and potential costs. This study aimed to determine whether lactate dehydrogenase (LDH) is associated with an increased risk of 30-day readmission in gastric cancer. **METHODS:** We performed a retrospective study of patients who underwent radical gastrectomy for gastric cancer at our institution between July 2014 and May 2018. Balanced cohorts were created by propensity score matching (PSM) with a 1:1 ratio to generate the elevated LDH (ELDH) group ($n = 151$) and the low LDH group (Control) ($n = 302$). To determine the incidence, causes, and risk factors of 30-day readmission, subgroup analyzes were performed and used to develop an efficient prediction model. **RESULTS:** A total of 788 patients met the criteria to be included in the study. The cutoff value for serum LDH was 215.5. After PSM, a total of 302 patients were matched in pairs (ELDH group, $n = 151$, Control group, $n = 151$). ELDH levels had a higher risk of readmission ($p = 0.005$, Odds ratio 3.768, 95% confidence interval 1.493-9.510). The pre-match 30-day readmission rate was 7.2 percent, and common

causes of post-match readmission included infection-related symptoms, gastrointestinal symptoms, and gastrointestinal bleeding. **CONCLUSIONS:** Patients with preoperative ELDH levels, postoperative complications, and high preoperative American Society of Anesthesiologists Scores had a higher risk of readmission 30 days after surgery.

Cheong, B., et al. (2023). "Thyroid Cancer Presenting as Neck Pain at a Chiropractic Clinic." *Cureus* **15**(5): e39276.

We report an unusual case of metastatic papillary thyroid carcinoma presenting with progressive neck pain in a 58-year-old female with known bilateral thyroid nodules. Despite initial benign ultrasonographic findings and trials of conservative therapy for over 2 months, the patient's anterior neck pain and unremitting symptoms prompted concern regarding an underlying orthopedic condition. She sought chiropractic consultation, and MRI revealed pathologic vertebral fractures. Biopsy of the thyroid and vertebral bone lesions demonstrated metastatic thyroid carcinoma. The patient was diagnosed with papillary thyroid cancer. The early detection of metastatic disease is critical for optimizing oncological treatment and outcomes. This case highlights the importance of close follow-up when the initial workup or management fails, consideration of sinister pathologies in high-risk patients, and a multidisciplinary approach to complex conditions. It provides an important reminder not to attribute unresolved symptoms to benign causes without serial re-evaluation, especially in patients with known risks, such as thyroid disease. A high index of suspicion and openness to atypical disease presentations is fundamental to avoid missed opportunities for diagnosis and prompt treatment.

Conceicao, F., et al. (2023). "The Secretome of Parental and Bone Metastatic Breast Cancer Elicits Distinct Effects in Human Osteoclast Activity after Activation of beta2 Adrenergic Signaling." *Biomolecules* **13**(4).

The sympathetic nervous system (SNS), particularly through the beta2 adrenergic receptor (beta2-AR), has been linked with breast cancer (BC) and the development of metastatic BC, specifically in the bone. Nevertheless, the potential clinical benefits of exploiting beta2-AR antagonists as a treatment for BC and bone loss-associated symptoms remain controversial. In this work, we show that, when compared to control individuals, the epinephrine levels in a cohort of BC patients are augmented in both earlier and late stages of the disease. Furthermore, through a combination of proteomic

profiling and functional in vitro studies with human osteoclasts and osteoblasts, we demonstrate that paracrine signaling from parental BC under beta2-AR activation causes a robust decrease in human osteoclast differentiation and resorption activity, which is rescued in the presence of human osteoblasts. Conversely, metastatic bone tropic BC does not display this anti-osteoclastogenic effect. In conclusion, the observed changes in the proteomic profile of BC cells under beta-AR activation that take place after metastatic dissemination, together with clinical data on epinephrine levels in BC patients, provided new insights on the sympathetic control of breast cancer and its implications on osteoclastic bone resorption.

Ebelhar, J., et al. (2023). "Differences in palliative opportunities across diagnosis groups in children with cancer." *Pediatr Blood Cancer* **70**(1): e30081.

BACKGROUND: Childhood cancer causes significant physical and emotional stress. Patients and families benefit from palliative care (PC) to reduce symptom burden, improve quality of life, and enhance family-centered care. We evaluated palliative opportunities across leukemia/lymphoma (LL), solid tumors (ST), and central nervous system (CNS) tumor groups. **PROCEDURE:** A priori, nine palliative opportunities were defined: disease progression/relapse, hematopoietic stem cell transplant, phase 1 trial enrollment, admission for severe symptoms, social concerns or end-of-life (EOL) care, intensive care admission, do-not-resuscitate (DNR) status, and hospice enrollment. A single-center retrospective review was completed on 0-18-year olds with cancer who died from January 1, 2012 to November 30, 2017. Demographic, disease, and treatment data were collected. Descriptive statistics were performed. Opportunities were evaluated from diagnosis to death and across disease groups. **RESULTS:** Included patients (n = 296) had LL (n = 87), ST (n = 114), or CNS tumors (n = 95). Palliative opportunities were more frequent in patients with ST (median 8) and CNS tumors (median 7) versus LL (median 5, p = .0005). While patients with ST had more progression/relapse opportunities (p < .0001), patients with CNS tumors had more EOL opportunities (p < .0001), earlier PC consultation, DNR status, and hospice enrollment. Palliative opportunities increased toward the EOL in all diseases (p < .0001). PC was consulted in 108 (36%) patients: LL (48%), ST (30%), and CNS (34%, p = .02). **CONCLUSIONS:** All children with cancer incur many events warranting PC support. Patients with ST and CNS tumors had more palliative opportunities than LL, yet received less subspecialty PC. Understanding palliative opportunities within

each disease group can guide PC utilization to ease patient and family stress.

Fidahussain, A. A., et al. (2022). "An Etiological Investigation of Paraneoplastic Cerebellar Degeneration in Ovarian Cancer Patients: A Systematic Review." *Cureus* **14**(11): e31154.

Paraneoplastic syndromes (PNS) are uncommon, distinct clinical complications of a primary tumor. Paraneoplastic cerebellar degeneration (PCD) is a PNS that is described as an autoimmune response targeting Purkinje cells in the cerebellum. Ovarian cancer (OC) is one of the most prevalent causes of cancer-related deaths in women. Anti-Yo is the most common onconeural antibody produced in the PCD immune response and is most typically found in ovarian and breast cancer patients. While the current literature highlights the predisposing genetic factors, diagnostic workflows, and treatment options, the pathophysiology of PCD, among other considerations, remains largely unestablished. This review aimed to systematically observe procedural solutions to facilitate an early diagnosis and improve the prognosis of patients with OC-associated PCD. To that end, we examined literature published from 01/01/2015-11/10/2022 indexed in PubMed by using the keywords "paraneoplastic, cerebellar degeneration" combined with "ovarian cancer." Inclusion criteria were met if PCD and OC diagnoses were made and if studies provided adequate patient information. After screening and assessing records for eligibility using the inclusion and exclusion criteria, 18 articles involving 102 patients were included. The typical patient observed in this sample was diagnosed with International Federation of Gynecology and Obstetrics (FIGO) Stage III, high-grade serous carcinoma. The diagnostic workup typically included a clinical evaluation for dysarthria (50%), ataxia (60%), and gait abnormalities (50%), along with multiple imaging modalities and serological findings (90%). Genetic screening for human leukocyte antigen (HLA) haplotype susceptibility for PCD and immune tolerance modulators regulation may also be recommended prior to starting treatment. Findings support the use of corticosteroids (35%) and intravenous immunoglobulin (IVIg) (40%) as viable treatment options for managing PCD in conjunction with systemic therapy for the primary malignancy. A diagnosis of PCD should be considered if a patient has had a malignancy in the past five years with the presence of explicit cerebellar symptoms. This clinical diagnosis can be further supplemented by serologic and radiologic findings. Recognizing PCD symptoms and scheduling genetic and proteomic

testing may help with early diagnosis and better prognosis.

Gharehzadehshirazi, A., et al. (2023). "Biomarkers and Corresponding Biosensors for Childhood Cancer Diagnostics." *Sensors (Basel)* **23**(3).

Although tremendous progress has been made in treating childhood cancer, it is still one of the leading causes of death in children worldwide. Because cancer symptoms overlap with those of other diseases, it is difficult to predict a tumor early enough, which causes cancers in children to be more aggressive and progress more rapidly than in adults. Therefore, early and accurate detection methods are urgently needed to effectively treat children with cancer therapy. Identification and detection of cancer biomarkers serve as non-invasive tools for early cancer screening, prevention, and treatment. Biosensors have emerged as a potential technology for rapid, sensitive, and cost-effective biomarker detection and monitoring. In this review, we provide an overview of important biomarkers for several common childhood cancers. Accordingly, we have enumerated the developed biosensors for early detection of pediatric cancer or related biomarkers. This review offers a restructured platform for ongoing research in pediatric cancer diagnostics that can contribute to the development of rapid biosensing techniques for early-stage diagnosis, monitoring, and treatment of children with cancer and reduce the mortality rate.

Gurdogan, M., et al. (2023). "Cancer Therapy-Related Pulmonary Hypertension: A Review of Mechanisms and Implications for Clinical Practice." *Anatol J Cardiol* **27**(6): 299-307.

Cancer therapy-related pulmonary hypertension is a rare yet potentially fatal cardiotoxicity. However, it is a reversible cause of pulmonary hypertension if detected in its early stages. Cancer therapy-related pulmonary hypertension has been encountered in patients using tyrosine kinase inhibitors, particularly dasatinib. However, it is also well known that many agents used in cancer treatment such as alkylating agents, proteasome inhibitors, thoracic radiation exposure, and immune checkpoint inhibitors are particularly associated with pulmonary hypertension evolution. In case that history, symptoms, and clinical findings suggest a potential cancer therapy-related pulmonary hypertension, echocardiography is considered as the initial tool to detect pulmonary hypertension. If the possibility of pulmonary hypertension is high based on echocardiographic data, cancer treatment, as the initial step, should be discontinued due to its potential risks and other causes for pulmonary hypertension

should be investigated thoroughly. Right heart catheterization should be the next step to establish the final diagnosis, and medical management, where appropriate, should be started without delay in these patients according to their pulmonary hypertension subgroup. There exists limited information regarding the diagnostic and management strategies of cancer therapy-related pulmonary hypertension in the current guidelines. In this review article, we aim to present current literature data on the mechanisms and management of cancer therapy-related pulmonary hypertension along with its follow-up algorithm in the setting of cardio-oncology practice.

Hamaguchi, K., et al. (2023). "Effects of COVID-19 pandemic on hospital visit of head and neck cancer patients." *Auris Nasus Larynx* **50**(6): 948-951.

OBJECTIVE: Head and neck cancer (HNC) often causes respiratory symptoms, so diagnostic delays due to COVID-19 are anticipated. Especially, our institute is a designated medical institute for Class 1 specified infectious diseases, and most of the severe COVID-19 patients in this region were preferentially admitted or transferred. Hereby, we evaluated the trends of the numbers, primary sites and clinical stages of HNC patients before and after COVID-19 pandemic. **METHODS:** A retrospective analysis of all patients diagnosed and treated for HNC from 2015 to 2021 was performed. Especially, 309 cases between 2018 and 2021 were extracted in order to examine a direct impact of COVID-19 pandemic, which were dichotomized into "Pre" group in 2018-2019 and "COVID" group in 2020-2021. They were compared about the distribution of clinical stage, the period between onset of symptom and hospital visit. **RESULTS:** HNC patients decreased by 38% in 2020 and by 18% in 2021 compared to average number of patients from 2015 to 2019. Patients of stage 0 and 1 in "COVID" group significantly decreased compared to that in "Pre" group. Cases performed emergent tracheostomy in hypopharyngeal cancer and laryngeal cancer increased in "COVID" group (10.5% vs 1.3%). **CONCLUSION:** Patients with slight symptoms would hesitated to visit hospital after COVID-19, and only a few delays of HNC diagnosis could have increased tumor burden and caused narrowed airway, especially in advanced HPC and LC.

Hao, R., et al. (2023). "Contribution of coping style to the association between illness uncertainty and demoralisation in patients with breast cancer: a cross-sectional mediation analysis." *BMJ Open* **13**(3): e065796.

OBJECTIVE: Demoralisation is a common psychological issue in patients with cancer and

aggravates depression, reduces the quality of life and even causes suicidal ideation. There is a lack of knowledge about illness uncertainty, coping style and demoralisation in patients with breast cancer. The current study explored the relationship between illness uncertainty and demoralisation among those patients, as well as the potential mediating role of coping style. **DESIGN:** A cross-sectional study. **SETTING:** Participants were recruited from the Breast Tumor Center in a tertiary hospital in Shijiazhuang, Hebei province. **PARTICIPANTS:** A total of 211 patients with breast cancer completed the survey. **OUTCOME MEASURES:** A total of 211 patients with breast cancer completed the Mishel's Uncertainty in Illness Scale, Trait Coping Style Questionnaire and the Mandarin version of Demoralization Scale (DS-MV). **RESULTS:** Of the patients, 47.40% exhibited symptoms of demoralisation (DS-MV>30), and the mean of demoralisation score was (29.55+/-13.21). The results demonstrated that illness uncertainty and negative coping styles were positively related to demoralisation ($p<0.001$), while active coping styles were negatively related to demoralisation ($p<0.001$). Importantly, coping styles could partially mediate the relationship between illness uncertainty and demoralisation ($p<0.01$). **CONCLUSION:** Our study illustrated that illness uncertainty was associated with demoralisation in patients with breast cancer, and coping style acted as a mediator in this relationship. The findings highlighted the critical role of reducing negative coping styles to the early prevention and efficient treatment of demoralisation among those patients.

Hryhorowicz, S., et al. (2022). "Strong Hereditary Predispositions to Colorectal Cancer." *Genes (Basel)* **13**(12).

Cancer is one of the most common causes of death worldwide. A strong predisposition to cancer is generally only observed in colorectal cancer (5% of cases) and breast cancer (2% of cases). Colorectal cancer is the most common cancer with a strong genetic predisposition, but it includes dozens of various syndromes. This group includes familial adenomatous polyposis, attenuated familial adenomatous polyposis, MUTYH-associated polyposis, NTHL1-associated polyposis, Peutz-Jeghers syndrome, juvenile polyposis syndrome, Cowden syndrome, Lynch syndrome, and Muir-Torre syndrome. The common symptom of all these diseases is a very high risk of colorectal cancer, but depending on the condition, their course is different in terms of age and range of cancer occurrence. The rate of cancer development is determined by its conditioning genes, too. Hereditary predispositions to

cancer of the intestine are a group of symptoms of heterogeneous diseases, and their proper diagnosis is crucial for the appropriate management of patients and their successful treatment. Mutations of specific genes cause strong colorectal cancer predispositions. Identifying mutations of predisposing genes will support proper diagnosis and application of appropriate screening programs to avoid malignant neoplasm.

Iavarone, M., et al. (2023). "Indolent cancer and pattern of progression: Two missing parameters in trial design for hepatology." *Hepatology*.

The indolent and aggressive behaviors of hepatocellular carcinoma (HCC) might have a role in clinical trial (CT) results; however, the indolent HCC is less analyzed compared to others cancer. Indolent profile could be characterized as follow: (a) patients with low risk of progression itself due to the HCC molecular profile and/or due to the interaction between cancer cell their microenvironment; (b) patients who achieve objective response or present spontaneous regression and (c) patients who develop radiological progression with no consequence on either the liver function or general status, and without trigger a change in the tumor stage. Patients with 'indolent HCC' generally never develop cancer-related symptoms neither die for HCC-related causes. Thus, we hypothesize that the imbalance in the proportion of 'indolent' versus 'aggressive HCC' between arms or the under-/over-estimation of HCC behavior at baseline in single arm CT could be associated to CT failure or under- overestimation of trial results. The 'indolent progression' may also explain the discrepancy between radiological progression-based end-points and survival. Moreover, we discuss the related-causes that explain the indolent profile of HCC and propose (a) refining the progression-related end-point by the pattern of progression to minimize the limitations of the current end-points; (b) considering alternative statistical tools for survival analysis such as Milestone Survival, or Restricted Mean Survival Time to capture the value of indolent HCC. According to these considerations, we propose incorporating novel end-points into the single arm of phase I/II CT as exploratory analysis or as a secondary end-point in phase III CT.

Igelstrom, H., et al. (2023). "Long-term effects on depression and anxiety of an internet-based stepped care intervention for patients with cancer and symptoms of depression and anxiety. The U-CARE AdultCan trial." *Internet Interv* **32**: 100625.

BACKGROUND: Cancer is a serious disease that commonly causes significant psychological distress. The internet-based

intervention (iCAN-DO), utilizing a stepped care approach for the treatment of anxiety and depression in individuals with cancer, has been shown to have favorable results for symptoms of depression at the primary endpoint, 10 months after randomization compared to standard care (SC). The aim of the present study was to evaluate the long-term effects of the intervention 18 and 24 months after randomization. **METHODS:** Patients with breast, colorectal, or prostate cancer and a score > 7 on either of the Hospital Anxiety and Depression Scale (HADS) subscales ($n = 245$) were recruited to the study in conjunction with a regular hospital visit. They were randomized to access to the stepwise iCAN-DO intervention for 24 months or to SC. Step 1 of the intervention comprised psycho-educative online material. In Step 2, internet-based cognitive-behavioral therapy with individual online support from a therapist was added. Step 2 was offered to those who reported persistent anxiety or depression symptoms (>7 on HADS), also at 1, 4, and/or 7 months after randomization. Missing data were imputed using the last rank carried forward method and used for the main analyses according to the intention-to-treat approach. Effects sizes (Cohen's d), and minimally clinically important difference (MCID) were calculated. Linear mixed models were used to analyze intervention effects over time. **RESULTS:** Symptoms of depression decreased significantly ($p < 0.05$) in the iCAN-DO group compared with the SC group from baseline to 18 months ($d = 0.29$), but not to 24 months ($d = 0.27$). Even though the average iCAN-DO group participant surpassed a MCID in symptoms of anxiety ($>2 p$) at both long-term follow-ups, the differences did not reach statistical significance, either at 18 months ($p = 0.10$) or 24 months ($p = 0.09$). Positive effects of iCAN-DO compared with the SC were also shown for some secondary HRQoL-outcomes; social functioning at 18 months ($p = 0.02$) and 24 months ($p = 0.001$), and sleep problems at 24 months ($p = 0.01$). **CONCLUSION:** A stepped-care internet-based intervention that has previously shown positive results for symptoms of depression at 10 months did show similar positive long-term effects also at 18 months. For symptoms of anxiety, no effect could be shown. The internet may provide an effective format for interventions to reduce symptoms of depression after cancer at patients' own choice of time, regardless of distance to a psycho-oncology clinic.

Ilic, I., et al. (2022). "Predictors of Anxiety Before and After Diagnostic Procedures in Women with Abnormal Papanicolaou Smear in Cervical Cancer Screening Program." *Behav Med*: 1-12.

Anxiety is one of the most common causes of withdrawal from follow-up among women with abnormal Papanicolaou screening results. The purpose of this study was to investigate predictors of anxiety in women with abnormal Papanicolaou smear in cervical cancer screening program. A population-based, cross-sectional study concerning the factors related to anxiety was carried out during 2017 in a cohort of women ($N = 172$) with positive Papanicolaou screening test before and after diagnostic procedures (colposcopy/biopsy/endocervical curettage) at one university Clinical Center in Serbia. Women completed a socio-demographic questionnaire and scale concerning anxiety (Hospital Anxiety and Depression Scale, subscale HADS-Anxiety) immediately before and 2-4 weeks after the diagnostic procedures. Multivariate logistic regression was applied in the data analysis. In our study, 35.2% ($n = 52$) of women had abnormal anxiety scores before the diagnostic procedures and 40.1% ($n = 69$) after the diagnostic procedures. Predictors of anxiety before diagnostic procedures were family history of noncervical gynecological cancers, higher level of worry and high burden of depressive symptoms. Significant independent predictors of anxiety after diagnostic procedures in women were rural residence, tension and discomfort during medical procedures, and less satisfaction with information/support. Although there was no significant difference in the prevalence of anxiety before and after diagnostic procedures in women with abnormal Papanicolaou screening results, results of this research will enable doctors to successfully make decisions concerning timely psychological support for women with positive screening test for cervical cancer that is necessary to decrease anxiety in our population.

Inoue, T. (2023). "The Malignant Obstruction Caused by Pancreatic Cancer Within the Uncinate Process in the Third Portion of the Duodenum." *Cureus* **15**(1): e33436.

Pancreatic cancer has a poor prognosis, and it often causes duodenal obstruction and obstructive jaundice associated with tumor invasion. Self-expandable metal stent (SEMS) placement is useful for duodenal obstruction. Pancreatic cancer can occur in the uncinate process, which may lead to malignant obstruction in the third portion of the duodenum. However, the upper gastrointestinal endoscope often cannot reach the third portion of the duodenum, and SEMS placement is sometimes difficult. We report a case of successful SEMS placement with a colonoscope for the obstruction of the third portion of the duodenum due to uncinate process cancer. A 67-

year-old Japanese male was referred to our hospital for palliative treatment of unresectable pancreatic cancer. He complained of anorexia and vomiting and was admitted to our hospital. Computed tomography (CT) scans showed the tumor with delayed enhancement in the pancreatic uncinate process. Esophagogastroduodenoscopy (EGD) and gastrografin enema revealed the stenosis caused by tumor invasion in the third portion of the duodenum. The stenosis was thought to cause his symptom. PCFQ260AZ endoscope (Olympus, Tokyo, Japan) was able to reach the stenosis, and a 22 mm x 80 mm uncovered SEMS (Niti-S, Taewoong Medical, Seoul, South Korea) was placed beyond the stenosis. After SEMS placement, his symptoms disappeared. Uncinate process cancer is located close to the third portion of the duodenum and caused the obstruction there. We should be cautious about this, and a colonoscope is useful for SEMS placement for malignant obstruction in the third portion of the duodenum.

Ito, M., et al. (2023). "Stereotactic body radiation therapy for prostate cancer: a study comparing 3-year genitourinary toxicity between CyberKnife and volumetric-modulated arc therapy by propensity score analysis." *Radiat Oncol* **18**(1): 39.

BACKGROUND: To investigate whether the rate of stereotactic body radiation therapy-related (SBRT-related) genitourinary (GU) toxicity is lower in patients with prostate cancer treated with CyberKnife. **METHODS:** We retrospectively reviewed the medical records of patients with nonmetastatic prostate cancer at two institutions between 2017 and 2020. We analyzed 70 patients who were extracted by propensity score matching based on age, pre-treatment International Prostate Symptom Score (IPSS), and prostate volume. The patients were treated with SBRT, with a total dose of 36.25 Gy in five fractions over five consecutive weekdays, using CyberKnife or volumetric-modulated arc therapy (VMAT). **RESULTS:** The low-, medium-, and high-risk patients were 2, 19, and 14, respectively, in the CyberKnife group and 4, 17, and 14, respectively, in the VMAT group. The median follow-up time in both groups was 3 years. One patient with CyberKnife died of unrelated causes. No biochemical or clinical recurrence, distant metastases, or death from prostate cancer was observed. The peak values of IPSS in the acute phase (< 3 months) were significantly lower in the CyberKnife than in the VMAT group (CyberKnife:16.2 vs VMAT:20.2, $p = 0.025$). In multiple regression analyses, the treatment modality ($p = 0.03$), age ($p = 0.01$), bladder medication pre-irradiation ($p = 0.03$), and neoadjuvant androgen

deprivation therapy ($p = 0.04$) contributed to the peak value of the acute-phase IPSS. The incidence of treatment-related grade 2 acute GU toxicity tended to be lower in the CyberKnife than the VMAT group (CyberKnife: 22.9% vs. VMAT: 45.7%, $p = 0.077$). No difference was noted between the groups with regard to late IPSS or GU toxicity and gastrointestinal toxicity in all phases. Toxicities of grade ≥ 3 have not been observed to date. **CONCLUSIONS:** Regardless of treatment modality, SBRT is effective in treating prostate cancer without serious toxicity. However, CyberKnife has an advantage over VMAT in terms of acute prostate symptoms.

Jager, J., et al. (2022). "Cetuximab-Induced Aseptic Meningitis in a Patient with Colorectal Cancer: A Case Report and Review of Literature." *Case Rep Neurol* **14**(3): 475-482.

Cetuximab is a chimeric IgG1 monoclonal antibody against epidermal growth factor receptor. It is approved by the European medical agency for the treatment of RAS wild-type metastatic colorectal cancer and metastatic squamous cell cancer of the head and neck. Few cases of aseptic meningitis, primarily associated with the first administration of cetuximab in patients with squamous cell cancer, have been reported. So far, there was only 1 case in a patient with metastatic colorectal cancer. We report on a 50-year-old Caucasian patient with metastatic rectum carcinoma who suffered from headache, fever, and neck stiffness 3 h after the first administration of cetuximab (400 mg/m²). CSF examination revealed an excessive pleocytosis with a white blood cell count of 2,433/microL. He was diagnosed with cetuximab-induced aseptic meningitis since clinical symptoms and CSF pleocytosis resolved within days, and further diagnostic workup revealed no infectious cause. Cetuximab-induced aseptic meningitis is a rare and severe drug reaction with predominance in treating squamous cell cancer of the head and neck. Clinical presentation and CSF findings suggest acute meningoencephalitis. In all reported cases, the course of the disease was benign and self-limited. Empiric antimicrobial and antiviral therapy are suggested until infectious causes can be ruled out. A lower dosage of cetuximab and a premedication including antihistamines and glucocorticosteroids may lower the risk of a re-occurrence if cetuximab therapy is continued.

Judd, A. C., et al. (2022). "Subclavian Vein Stenosis Imitating Inflammatory Breast Cancer." *Cureus* **14**(12): e32184.

Unilateral breast erythema, edema, and peau d'orange are classically associated with inflammatory

breast cancer. However, occasionally this constellation of symptoms is seen with other causes. Maintaining a broad differential can therefore save a prospective patient from months of worry about a possible cancer diagnosis, untreated symptoms, and unnecessary and expensive tests. Here we present the case of a 75-year-old woman with a history of pacemaker placement complicated by left upper extremity deep venous thrombosis (DVT) who subsequently developed left breast peau d'orange, swelling, and erythema. After initially being worked up for inflammatory breast cancer, including multiple breast biopsies, she was then referred to specialists in cardiology, allergy, pulmonology, rheumatology, dermatology, lymphedema therapy, and vascular surgery undergoing an exhaustive workup that spanned nearly a year. Eventually, a venogram was performed, which revealed complete occlusion of her left subclavian vein. After undergoing angioplasty and stenting, her symptoms resolved.

Kepka, L. (2023). "Palliative extracranial radiotherapy in patients receiving immunotherapy for non-small cell lung cancer: a narrative review." *Transl Cancer Res* 12(1): 163-176.

BACKGROUND AND OBJECTIVE: Role of radiotherapy (RT) in the era of immuno-oncology (IO) in advanced non-small cell lung cancer (NSCLC) is rapidly changing. RT is not only intended for addressing palliation symptoms but also is considered as a potential tool potentializing an immunogenic effect of given drugs. However, the best timing, techniques, doses, volumes, and its use for asymptomatic patients is a subject of research. We performed a review on the role of palliative RT schedules in combination with IO for advanced NSCLC. Indications in symptomatic and asymptomatic patients, outcomes, toxicity, and possible developments are discussed. **METHODS:** A literature search was conducted in MEDLINE and PubMed databases and clinicaltrials.gov using the keywords 'lung cancer' AND "immunotherapy" AND 'radiotherapy' OR "palliative radiotherapy". **KEY CONTENT AND FINDINGS:** Body of evidence indicate that palliative RT used in combination with IO is effective in terms of symptom management and safe; does not increase the risk of serious side effects, including serious pulmonary toxicity. We have limited data evidencing improvement of survival by addition of short ablative RT dose to one site of the disease to IO in oligometastatic NSCLC. Some data indicate that short ablative doses of stereotactic body radiation therapy (SBRT) are more effective with regard to treatment response and survival than protracted RT schedule with lower fractional doses. However, this may be a selection bias of better

prognostic patients who underwent SBRT. The use of steroids being a potential concern during IO should not be prohibited if clinically indicated during palliative RT. Its detrimental effect shown in some studies may also be a result of selection bias, because steroids given for not cancer-related causes during IO did not decrease survival. **CONCLUSIONS:** RT for symptom management may be used during, directly before or after IO. This has a potential to ease symptom burdens and improve performance status (PS). However, still more studies are needed to establish optimal guidelines in asymptomatic patients for appropriate timing, volumes, dose, and fractionation schedules of palliative RT use in combination with IO.

Kim, S. J., et al. (2023). "Racial disparities in opioid prescription and pain management among breast cancer survivors." *Cancer Med* 12(9): 10851-10864.

BACKGROUND: We examined whether there are racial disparities in pain management, opioid medicine prescriptions, symptom severity, and quality of life constructs in breast cancer survivors. **METHODS:** We conducted a secondary analysis of longitudinal data from the Women's Hormonal Therapy Initiation and Persistence (WHIP) study (n = 595), a longitudinal study of hormonal receptor-positive breast cancer survivors. Upon study enrollment, patients completed a survey assessing an array of psychological, behavioral, and treatment outcomes, including adjuvant endocrine therapy (AET)-induced symptoms, and provided a saliva biospecimen. Opioid prescription records were extracted from the health maintenance organizations (HMOs) pharmacy database. The final analytic sample included women with complete HMO pharmacy records for 1 year. **RESULTS:** There were 251 eligible patients, of which 169 (67.3%) were White. The average age was 61.09 years old (SD = 11.07). One hundred seventy-two patients (68.5%) had received at least one opioid medication and 37.1% were prescribed opioids longer than 90 days (n = 93). Sixty-four Black patients (78%) had a record of being prescribed with opioids compared to 64% of White patients (n = 108, p = 0.03). Black patients reported worse vasomotor, neuropsychological, and gastrointestinal symptoms, as well as lower quality of life and greater healthcare discrimination than White patients (p's < 0.05). Black patients were more likely to be prescribed opioids for 90 days or longer compared to White patients, when controlling for age, marital status, income, body mass index (BMI), cancer stage, and chemotherapy status (adjusted Odds Ratio = 2.72, p = 0.014). **CONCLUSION:** Findings indicate that there are racial differences in opioid prescriptions supplied for pain management and

symptomatic outcomes. Future research is needed to understand the causes of disparities in cancer pain management and symptomatic outcomes.

Komoda, J., et al. (2023). "Hypomagnesemia because of nedaplatin for cervical cancer: A case report." *J Gen Fam Med* **24**(4): 257-260.

A 76-year-old woman with cervical cancer was treated with nedaplatin, a platinum-based drug. After the initiation of the treatment, she became aware of numbness, dizziness, and loss of appetite. Exploration of the causes revealed no clues, but blood tests revealed hypocalcemia and hypomagnesemia. She was treated with intravenous calcium and magnesium, which resolved calcium, magnesium levels, and her symptoms. She was diagnosed with hypomagnesemia because of nedaplatin. Regular follow-up is necessary for patients during or after nedaplatin. Awareness of electrolyte disturbances may elucidate the accurate diagnosis even in patients with obscure symptoms, particular in undergoing or following anticancer therapies.

Lantz, A., et al. (2023). "Prostate Cancer IRE Study (PRIS): A Randomized Controlled Trial Comparing Focal Therapy to Radical Treatment in Localized Prostate Cancer." *Eur Urol Open Sci* **51**: 89-94.

The aim of focal treatments (FTs) in prostate cancer (PCa) is to treat lesions while preserving surrounding benign tissue and anatomic structures. Irreversible electroporation (IRE) is a nonthermal technique that uses high-voltage electric pulses to increase membrane permeability and induce membrane disruption in cells, which potentially causes less damage to the surrounding tissue in comparison to other ablative techniques. We summarize the study protocol for the Prostate Cancer IRE Study (PRIS), which involves two parallel randomized controlled trials comparing IRE with (1) robot-assisted radical prostatectomy (RARP) or (2) radiotherapy in men with newly diagnosed intermediate-risk PCa (NCT05513443). To reduce the number of patients for inclusion and the study duration, the primary outcomes are functional outcomes: urinary incontinence in study 1 and irritative urinary symptoms in study 2. Providing evidence of the lower impact of IRE on functional outcomes will lay a foundation for the design of future multicenter studies with an oncological outcome as the primary endpoint. Erectile function, quality of life, treatment failure, adverse events, and cost effectiveness will be evaluated as secondary objectives. Patients diagnosed with Gleason score 3 + 4 or 4 + 3 PCa from a single lesion visible on magnetic resonance imaging (MRI) without any

Gleason grade 4 or higher in systematic biopsies outside of the target (unifocal significant disease), aged ≥ 40 yr, with no established extraprostatic extension on multiparametric MRI, a lesion volume of < 1.5 cm³, prostate-specific antigen < 20 ng/ml, and stage $\leq T2b$ are eligible for inclusion. The study plan is to recruit 184 men.

Larsen, H. M., et al. (2023). "Chronic loose stools following right-sided hemicolectomy for colon cancer and the association with bile acid malabsorption and small intestinal bacterial overgrowth." *Colorectal Dis* **25**(4): 600-607.

AIM: Patients treated with right-sided hemicolectomy for colon cancer may suffer from long-term bowel dysfunction, including loose stools, urgency and faecal incontinence. The underlying causes are poorly understood. The aim of this case-control study was to investigate the aetiology of chronic loose stools among patients with right-sided hemicolectomy curatively operated for cancer. METHOD: Cases with chronic loose stools (Bristol stool type 6-7) after right-sided hemicolectomy were compared with a control group of patients with right-sided hemicolectomy without loose stools. All patients underwent a selenium-75 homocholeic acid taurine (SeHCAT) scan to diagnose bile acid malabsorption (BAM) and a glucose breath test to diagnose small intestinal bacterial overgrowth (SIBO). Gastrointestinal transit time (GITT) was assessed with radiopaque markers. In a subgroup of patients, fibroblast growth factor 19 (FGF19) was measured in fasting blood. SIBO was treated with antibiotics and BAM was treated with bile acid sequestrants. RESULTS: We included 45 cases and 19 controls. In the case group, 82% (n = 36) had BAM compared with 37% (n = 7) in the control group, $p < 0.001$. SIBO was diagnosed in 73% (n = 33) of cases with chronic loose stools and in 74% (n = 14) of controls, $p = 0.977$. No association between BAM and SIBO was observed. GITT was similar in cases and controls. No difference in median FGF19 was observed between cases and controls ($p = 0.894$), and no correlation was seen between FGF19 and SeHCAT retention ($r(s) 0.20$, $p = 0.294$). Bowel symptoms among cases were reduced after treatment. CONCLUSION: BAM and SIBO are common in patients having undergone right-sided hemicolectomy for cancer. Chronic loose stools were associated with BAM but not with SIBO.

Li, Y., et al. (2023). "Superior mesenteric artery syndrome following lung cancer surgery: A case report." *Int J Surg Case Rep* **105**: 108036.

INTRODUCTION AND IMPORTANCE: Superior mesenteric artery syndrome (SMAS) is a

rare medical condition resulting from vascular compression of the third part of the duodenum in the angle between the aorta and the superior mesenteric artery, leading to partial or complete intestinal obstruction and causing a series of symptoms. We now introduce a case of SMAS after lung cancer surgery, which was unique in that it was most likely caused by weight loss after surgery. **CASE PRESENTATION:** A 58-year-old male patient gradually developed severe nausea, vomiting, and weight loss after lung cancer surgery. A diagnosis of SMAS was made after the computed tomography of the abdomen was performed. The patient's symptoms were relieved after immediate placement of a nasojunal nutrition tube for gastrointestinal decompression and enteral nutrition support. **CLINICAL DISCUSSION:** SMAS is rare and the symptoms are not specific, the clinical diagnosis of it is mostly confirmed by imaging. The presence of SMAS should be considered as a possibility when recurrent nausea and vomiting occur after lung surgery that excludes the above-mentioned causes. **CONCLUSION:** The signs and symptoms of SMAS are usually non-specific, which leads to misdiagnosis in all probability. SMAS should be considered when unexplained significant weight loss accompanied by recurrent nausea and vomiting happens to postoperative patients.

Liang, H., et al. (2023). "Ferroptosis open a new door for colorectal cancer treatment." *Front Oncol* **13**: 1059520.

Colorectal cancer (CRC) is the third highest incidence and the second highest mortality malignant tumor in the world. The etiology and pathogenesis of CRC are complex. Due to the long course of the disease and no obvious early symptoms, most patients are diagnosed as middle and late stages. CRC is prone to metastasis, most commonly liver metastasis, which is one of the leading causes of death in CRC patients. Ferroptosis is a newly discovered cell death form with iron dependence, which is driven by excessive lipid peroxides on the cell membrane. It is different from other form of programmed cell death in morphology and mechanism, such as apoptosis, pyroptosis and necroptosis. Numerous studies have shown that ferroptosis may play an important role in the development of CRC. For advanced or metastatic CRC, ferroptosis promises to open a new door in the setting of poor response to chemotherapy and targeted therapy. This mini review focuses on the pathogenesis of CRC, the mechanism of ferroptosis and the research status of ferroptosis in CRC treatment. The potential association between

ferroptosis and CRC and some challenges are discussed.

Liu, L., et al. (2023). "Impact of alexithymia on suicidal ideation among patients with ovarian cancer: a moderated mediation model of self-perceived burden and general self-efficacy." *Support Care Cancer* **31**(3): 177.

PURPOSE: Suicidal ideation (SI) and alexithymia are common psychological problems among patients with cancer. Studying how alexithymia predicts SI is helpful for its intervention and prevention strategies. The present study aimed to investigate whether self-perceived burden (SPB) mediates the impact of alexithymia on SI and if general self-efficacy moderates the associations of alexithymia with SPB and SI. **METHODS:** To measure SI, alexithymia, SPB, and general self-efficacy, 200 patients with ovarian cancer at all stages regardless of the type of treatment completed the Chinese version of the Self-Rating Idea of Suicide Scale, Toronto Alexithymia Scale, Self-Perceived Burden Scale, and General Self-Efficacy Scale in a cross-sectional study. The **PROCESS** macro for SPSS v4.0 procedure was applied to perform moderated mediation analysis. **RESULTS:** SPB significantly mediated the positive impact of alexithymia on SI ($axb = 0.082$, 95% confidence interval [CI]: 0.026, 0.157). General self-efficacy significantly moderated the positive association between alexithymia and SPB ($\beta = -0.227$, $P < 0.001$). The mediating role of SPB was gradually reduced as general self-efficacy grew (low: 0.087, 95% CI: 0.010, 0.190; medium: 0.049, 95% CI: 0.006, 0.108; high: 0.010, 95% CI: -0.014, 0.046). Thus, a moderated mediation model involving SPB and general self-efficacy for explaining how alexithymia causes SI was supported. **CONCLUSION:** Alexithymia could cause SI by inducing SPB among patients with ovarian cancer. General self-efficacy could attenuate the association between alexithymia and SPB. Interventions aimed at reducing SPB and enhancing general self-efficacy could reduce SI by partially preventing and attenuating the impact of alexithymia.

Loughlin, K. R. (2023). "The Great Masquerader's New Wardrobe in the Modern Era: The Paraneoplastic Manifestations of Renal Cancer." *Urol Clin North Am* **50**(2): 305-310.

Paraneoplastic syndromes can occur in 8% to 20% of individuals with malignancies. They can occur in a variety of cancers that include breast, gastric, leukemia, lung, ovarian, pancreatic, prostate, testicular, as well as kidney. The classic presentation of the triad of mass, hematuria, and flank pain occurs

in less than 15% of patients with renal cancer. Because of the protean presentations of renal cell cancer, it has been referred to as the internist's tumor or the great masquerader. This article will provide a review of the causes of these symptoms.

Manfuku, M., et al. (2023). "Predictors of persistent post-surgical pain intensity and interference at 1 year after breast cancer surgery: assessing central sensitization, central sensitivity symptoms, and psychological factors." *Breast Cancer* **30**(2): 271-281.

BACKGROUND: Persistent post-surgical pain (PPSP) is associated with upper limb dysfunction and decreased quality of life and causes long-term suffering for breast cancer survivors after surgery. However, the predictors of PPSP remain unclear. The purpose of this study was to examine predictors of PPSP intensity and interference at 1 year postoperatively, focusing on treatment-related factors, pre- and postoperative central sensitization (CS), CS-related symptoms (e.g., muscle stiffness, fatigue, sleep disturbances), and psychological factors. **METHODS:** Eighty-eight women with planned unilateral breast cancer surgery were included in this longitudinal study. CS, CS-related symptoms, and psychological factors were assessed preoperatively, 1 month postoperatively, and 1 year postoperatively. Analysis of covariance was used to compare the groups with and without PPSP, accounting for treatment-related factors. Multiple regression analysis was performed to identify predictors of PPSP intensity and interference at 1 year postoperatively. **RESULTS:** Even after adjusting for covariates, preoperative and 1-month postoperative Central Sensitization Inventory scores in the PPSP group were significantly higher than scores in the group without PPSP. Multiple regression analysis showed that axillary lymph node dissection (ALND) and 1-month postoperative CS-related symptoms were independent predictors of PPSP intensity and interference at 1 year postoperatively ($p < 0.01$). **CONCLUSION:** We found that ALND and 1-month postoperative CS-related symptoms were predictors of PPSP intensity and interference at 1 year postoperatively.

Marton, L. and G. Vizin (2023). "[A study on self-compassion and stigmatisation in female patients with breast cancer]." *Neuropsychopharmacol Hung* **25**(2): 57-69.

Background: The number of patients with cancer is increasing rapidly: in only one year, in 2020 19.3 million new cases were registered and as many as 10 million deaths occurred due to tumours worldwide. Shame and self-blame for developing cancer deteriorate patients' quality of life and

correlate significantly with poor adaptation and physical health, consequently may be risk factors in the final negative outcome. It is proven that stigmatisation may cause torturing emotional symptoms like shame leading to depressive symptoms, which, in turn, may deteriorate the patient's capacity to cope and her well-being, thus growing the risk of mortality. For all the above, a high level of self-compassion may be a potential solution. Numerous studies have already proven that self-compassion may significantly decrease the level of shame, depression, frustration as well as the perception of being stigmatised while resulting in a measurably better quality of life. The purpose of the investigation was to point out the relationship between shame, stigmatisation, depression on the one hand, and self-compassion on the other while providing support for the effectiveness of self-compassionbased interventions among female breast cancer patients. **Methods:** The present study is part of the first phase of a translational research, in other words it is part of a basic research already carried out. This cross-sectional study collected data using online questionnaires based on self-reports with female breast cancer patients aged between 18 and 45, who had been diagnosed in the past two years and did not present with distant metastases ($n=79$, mean age: 39.05 years, $SD= 7.37$). To measure constructs standardised scales were applied including the Experience of Shame Scale (ESS), the Stigma Scale for Chronic Illnesses 8-item version (SSCI8), the Hospital Anxiety and Depression Scale (HADS) and the Self-Compassion Scale (SCS). The research hypotheses were tested by hierarchic regression, correlation, and mediation analyses. **Results:** Stigmatisation shows a positive and strong ($r = 0.56$, $p < 0.01$) relationship with physical shame while self-compassion has a negative and strong relationship with the same ($r = 0.71$, $p < 0.01$). Hierarchical regression revealed that self-compassion was the only predictive factor in female breast cancer patients regarding physical shame ($\beta = - 0.09$, $p < 0.001$) after controlling for age, marital status, exposure to operation, stigmatisation, and depression. According to mediation models a higher level of stigmatisation may result in a more expressed feeling of shame and depression through a lower level of self-compassion. We found a full mediation between shame and depression, which means that shame causes a higher level of depression entirely indirectly, through a decrease in self-compassion. **Conclusions:** The results of this work highlight the expected effectiveness of developing self-compassion in terms of alleviating shame, stigmatisation, and depression, thus contributing to a better quality of life among cancer patients. The main purpose of the translational

research that was the basis of the present study was to develop a complex cognitive therapeutic programme that would, in a gap-filling way, offer oncological patients an effective psychological intervention supported by investigation. The results of the present study prove beyond doubt the rationale of the programme and involve the basic elaboration of a significant psycho-oncological practice.

Mathew, A., et al. (2023). "Symptom Cluster Experiences of Patients Operated for Oral Cancer: A Mixed Methods Study." *Semin Oncol Nurs* **39**(3): 151407.

OBJECTIVE: This convergent mixed methods study aimed to obtain a comprehensive understanding of symptom cluster experiences in patients with oral cancer. Survey and phenomenological interviews were conducted in parallel to identify distinct patient subgroups based on symptom cluster experiences along with their predictors and explore experiences of living with symptom clusters, respectively. **DATA SOURCES:** A convenience sample of 300 patients with oral cancer who had completed surgery provided the quantitative data, and a maximum variation purposive subsample of 20 participants, drawn from the survey sample, provided the qualitative data. Agglomerative hierarchical cluster analysis was used to identify subgroups, multivariate analyses were done to identify predictors, and thematic analysis was used for patient narratives. **CONCLUSION:** Almost 94% of the survey participants had two or more co-occurring symptoms. The four most severe and prevalent symptoms were dysphagia, problems with teeth or gums, speech difficulty, and dry mouth. A distinct subgroup consisting of 61% of patients reported severe dysphagia and teeth problems, which was associated with age, oral cancer stage and site. Interviews revealed the causes and the context influencing the perception and response to these symptoms. Thus, the quantitative data provided information on severity and patient subgroups based on symptom cluster experiences, while the qualitative data validated these conclusions and additionally provided in-depth details and meaningful insight on perceived causes and contextual influences of their experiences. This comprehensive picture of symptom cluster experiences can aid in the development of patient-centered interventions for people with oral cancer. **IMPLICATIONS FOR NURSING PRACTICE:** An interdisciplinary approach to targeting concurrent symptoms incorporating psychological and physical interventions is necessary. Older patients treated for Stage IV cancers and for buccal mucosa tumors are at high-risk of having severe dysphagia postoperatively, and these patients

should be targeted for dysphagia interventions. The contextual factors play an important role in developing patient-centered interventions.

Meena, R. K., et al. (2022). "Patterns of Treatment and Outcomes in Epithelial Ovarian Cancer: A Retrospective North Indian Single-Institution Experience." *JCO Glob Oncol* **8**: e2200032.

PURPOSE: Ovarian cancer (OC) is ranked as the third most common gynecologic cancer in various Indian cancer registries. In India, OC is seen in the younger age group, with a median age < 55 years being reported by most of the studies. The majority of patients are diagnosed in advanced stage (70%-80%), where the long-term (10-year) survival rate is poor, estimated at 15%-30%. The aim of this study was to evaluate clinical epidemiology, treatment patterns, and survival outcomes in patients with epithelial OC. **METHODS:** This was a retrospective analysis of patients with epithelial OC who were treated at Sher-i-Kashmir Institute of Medical Sciences, Srinagar, over a period of 9 years, from January 2010 to December 2018. **RESULTS:** OC constituted 2.94% of all cancers registered. Epithelial OC constituted 88.4% of all OCs, with a median age 50 years. More than two third of patients belonged to rural background and the majority (76.9%) of the patients were in stage III or IV at the time of diagnosis. The main presenting symptoms were abdominal distension/bloating (46.5%) and gastrointestinal disturbances (35.2%). The most common histologic types were serous (65.9%) followed by mucinous carcinoma (15%). Median overall survival for the whole study cohort was 30 months (95% CI, 28.0 to 31.9). Median overall survival for stage I, II, III, and IV was 72, 60, 30, and 20 months, respectively. **CONCLUSION:** Most of the patients presented in advanced stage of the disease and have poor outcome. Delay in diagnosis and improper management before registering in tertiary cancer center and lack of tertiary care facilities are the root causes of poor outcomes. The general population and primary care physicians need to be made aware of OC symptoms.

Mekonnen, A. G., et al. (2022). "Experience of patients with breast cancer with traditional treatment and healers' understanding of causes and manifestations of breast cancer in North Shewa zone, Ethiopia: a phenomenological study." *BMJ Open* **12**(12): e063726.

OBJECTIVES: Despite a high number of traditional healers (THs) who treat patients with cancer in Ethiopia, there is limited evidence that explored the lived experience of patients with breast cancer (BC) with traditional treatment and healers'

understanding of the causes and manifestations of BC. DESIGN: A phenomenological study design was employed. SETTING: This study was conducted in the North Shewa zone in Ethiopia. PARTICIPANTS: Eight in-depth interviews were conducted; four of which were with patients with BC and four with THs. Semistructured interviewing techniques were used to collect data from the two groups of respondents. All interviews were audio-recorded. The recorded data were transcribed verbatim. Coding and marking were then performed to make the raw data sortable. The marked codes were then summarised and categorised into themes. RESULTS: In this study, some of THs were unaware of the main risk factors or causes of BC. They did not mention the lifestyle risk factors of BC such as smoking cigarettes, consuming alcohol and eating habits. The most common clinical manifestations noted by THs were lumps at the breast, discharge from the nipples and weakness. All of the THs got their knowledge of BC treatment from their families and through experience. Regarding the lived experience of treatment, some patients with BC perceived that traditional medicines were safer and more effective than modern treatments and they eventually referred themselves to the THs. CONCLUSIONS: Although THs were unaware of the causes of BC, they were familiar with basic signs and symptoms of the disease. Patients with BC referred themselves to the THs because they preferred traditional therapies to modern ones. In order to better satisfy the unmet needs of Ethiopian women with BC, due consideration should be given to traditional treatments.

Mishra, Y., et al. (2023). "Aptamers Versus Vascular Endothelial Growth Factor (VEGF): A New Battle against Ovarian Cancer." *Pharmaceuticals (Basel)* **16**(6).

Cancer is one of the diseases that causes a high mortality as it involves unregulated and abnormal cell growth proliferation that can manifest in any body region. One of the typical ovarian cancer symptoms is damage to the female reproductive system. The death rate can be reduced through early detection of the ovarian cancer. Promising probes that can detect ovarian cancer are suitable aptamers. Aptamers, i.e., so-called chemical antibodies, have a strong affinity for the target biomarker and can typically be identified starting from a random library of oligonucleotides. Compared with other probes, ovarian cancer targeting using aptamers has demonstrated superior detection effectiveness. Various aptamers have been selected to detect the ovarian tumor biomarker, vascular endothelial growth factor (VEGF). The present review highlights the development of particular aptamers that target

VEGF and detect ovarian cancer at its earliest stages. The therapeutic efficacy of aptamers in ovarian cancer treatment is also discussed.

Monti, M., et al. (2023). "Hemophagocytic lymphohistiocytosis in gastric cancer: A rare syndrome for the oncologist. Case report and brief review." *Front Oncol* **13**: 1010561.

Hemophagocytic lymphohistiocytosis (HLH) is a rare and life-threatening condition characterized by uncontrolled activation of the immune system. HLH is a reactive mononuclear phagocytic response that occurs in association with a constellation of conditions such as malignancies and infections. The clinical diagnosis of HLH remains challenging because HLH can present with symptoms that significantly overlap with other causes of cytopenia, such as sepsis, autoimmune diseases, hematological cancers, and multiorgan failure. A 50-year-old man went to the emergency room (ER) for hyperchromic urine, melena, gingivorrhagia, and spontaneous abdominal wall hematomas. The first blood tests showed severe thrombocytopenia, alteration of the INR, and consumption of fibrinogen, and therefore, a diagnosis of disseminated intravascular coagulation (DIC) was made. A bone marrow aspirate showed numerous images of hemophagocytosis. With the suspicion of immune-mediated cytopenia, oral etoposide, intravenous immunoglobulin, and intravenous methylprednisolone were administered. Then, a diagnosis of gastric carcinoma was performed with a lymph node biopsy and gastroscopy. On the 30th day, the patient was transferred to the oncology ward of another hospital. On admission, he had serious piasrinopenia, anemia, hypertriglyceridemia, and hyperferritinemia. He was supported with a platelet transfusion and underwent a bone biopsy that showed a picture compatible with myelophthisis from diffuse medullary localization of a carcinoma of gastric origin. A diagnosis of HLH secondary to solid neoplasm was formulated. The patient started chemotherapy with oxaliplatin, calcium levofolinate, 5-fluorouracil bolus, 5-fluorouracil for 48 h (mFOLFOX6), and methylprednisolone. Six days after the third cycle of mFOLFOX6, the patient was discharged with the stabilization of his piasrinopenia condition. The patient continued chemotherapy with an improvement in his clinical conditions and normalization of hematological values. After 12 cycles of mFOLFOX, it was decided to start maintenance chemotherapy with capecitabine but, unfortunately, after only one cycle, HLH reappeared. The oncologist has to keep in mind the existence of HLH when there is an unusual clinical presentation of cancer, such as cytopenia affecting ≥ 2 lineages

and alterations of ferritin and triglycerides other than fibrinogen and coagulation. Increased attention and additional research as well as a close collaboration with hematologists are needed to benefit patients with solid tumors complicated by HLH.

Nakanishi, K., et al. (2022). "Zinc deficiency is associated with gynecologic cancer recurrence." *Front Oncol* **12**: 1025060.

Zinc deficiency can cause various symptoms, including hair loss, anemia, and taste disorders. Recently, the association between cancer and zinc deficiency has received much attention with respect to its antioxidant properties. However, only a few studies have investigated the association between gynecologic cancers and zinc; to date, no studies have evaluated serum zinc status at the onset of gynecologic cancer or the relationship between zinc and cancer recurrence. The objectives of the present study were to determine whether serum zinc concentrations are associated with the development of gynecologic cancer, to clarify serum zinc dynamics between the onset and recurrence of gynecologic cancer, and to identify the associated factors. Accordingly, we retrospectively determined serum zinc concentrations before treatment in gynecologic patients with benign disease or cancer at the Nippon Medical School Chiba Hokusoh Hospital. We investigated anemia and hypoalbuminemia-the most common causes of zinc deficiency-as indicators of hyponutrition to determine the causal relationship of this deficiency with chemotherapy, radiation therapy, and recurrence, which may affect zinc concentration during cancer recurrence. The results indicated that there was no difference in zinc concentration between preoperative cancer patients and noncancer patients and that serum zinc concentrations were not associated with developing gynecologic cancers. However, patients with gynecologic cancer exhibited significantly lower serum zinc concentrations following treatment, and patients with recurrent cancer were 4.8 times more likely to develop zinc deficiency than those with nonrecurrent cancer. A serum zinc concentration of <61 mug/dL was an independent predictor of recurrence. Once zinc deficiency occurred, the recurrence rate of zinc deficiency reached as high as 69%. Overall, our study indicates that zinc deficiency is associated with recurrence in gynecological cancers and physicians should monitor zinc levels during disease management.

Nasri, E. and A. Eskandarian (2022). "Misdiagnosis of Plasmodium vivax in a Case of Mixed Malaria, Lead to Wrong Anti-Cancer Chemotherapy, Splenectomy, and Partial Hepatectomy Due to

Relapse: A Case Report." *Iran J Parasitol* **17**(3): 420-424.

Malaria is a multilateral parasitic infection, which causes wonderful mortality and morbidity worldwide. It sometimes accompanied a quaint appearance. An Iranian 50-year-old man was admitted to Omid, hospital, a specialized cancer hospital in Isfahan, Iran. Because of a 15-year persisted anemia due to misdiagnose of vivax malaria led him to three courses of anticancer chemotherapy and splenectomy. His blood smears were sent to the Department of Parasitology, School of Medicine, Isfahan University of Medical Sciences, Iran. Our findings from his history, file documents, clinical signs and symptoms, and parasitological and molecular assessments revealed an interesting case, which is reported.

Nauck, F. and G. Benze (2023). "[Symptom management in advanced cancer : Relief of pain, nausea and vomiting in the context of palliative care]." *Inn Med (Heidelb)* **64**(1): 25-33.

Patients with incurable cancer can suffer from a variety of symptoms that adversely impact the quality of life. Pain, nausea and vomiting are common symptoms in this context. These symptoms can be tumor-related, tumor-associated or treatment-related but can also have independent causes. The aim of this article is to present the complexity of these symptoms, symptom assessment and the current treatment guidelines. Apart from physical causes, there may also be psychological, social or spiritual causes for these distressing symptoms. In addition to pharmacological treatment, a comprehensive needs-oriented approach involving treatment by a multiprofessional team (doctors, nurses, physiotherapists, psychologists, art and music therapists, social workers, pastoral workers) consisting of healthcare professionals and volunteers can help to alleviate symptoms. The differentiation of nociceptive and neuropathic pain is indicative for the selection of medication in pain management, and medication should be individually titrated. For the treatment of nausea and vomiting, an etiology-based approach should be used and the receptor specificity of antiemetics should be considered. If symptoms can be anticipated, at least an adequate medication should generally be prescribed for the possible needs, and if symptoms persist a basic medication should be the rule. Guidelines, such as the S3 guidelines on supportive therapy in oncology patients and the S3 guidelines on palliative care for patients with incurable cancer, are principles for routine clinical practice.

Nguyen, T., et al. (2023). "Effect of Exercise Training on Quality of Life, Symptoms, and Functional Status in Advanced-Stage Lung Cancer Patients: A Systematic Review." *Clin Pract* **13**(3): 715-730.

Advanced-stage lung cancer (LC) causes significant morbidity and impacts patients' quality of life (QoL). Exercise has been proven to be safe, feasible, and beneficial for symptom reduction and QoL improvement in many types of cancers, but research is limited in advanced-stage LC patients. This systematic review evaluates the effect of exercise interventions on the symptoms and QoL in patients with advanced-stage LC. Twelve prospective studies (744 participants) were included, evaluating different combinations of exercises and training such as aerobics, tai chi, strength, inspiratory muscle training, and relaxation. Studies found outcomes including but not limited to improved QoL, symptom burden, psychosocial health, functional status, and physical function. The results of this review support that exercise is safe and feasible with evidence supporting improved QoL and symptom mitigation. Integration of exercise should be considered in the individualized management of advanced-stage LC patients under the guidance of their healthcare providers.

Njoum, Y., et al. (2023). "The first reported case of clicking larynx syndrome complicating thyroidectomy due to papillary thyroid cancer." *Int J Surg Case Rep* **108**: 108443.

INTRODUCTION AND IMPORTANCE: When the superior cornu or the top edge of the thyroid cartilage rubs against the hyoid, or when these structures come to rub against the cervical spine, Clicking Larynx Syndrome (CLS) occurs. Which is a very rare disorder in that only less than 20 cases are reported in the literature. Patients seldom ever mention past laryngeal injuries. The cause of the accompanying pain when present is yet unknown. Gold standard management appears to be thyroplastic surgery in which the structures responsible for the clicking sounds are removed or reduction of the size of the large horn of the hyoid bone. **CASE PRESENTATION:** Herein, we present a 42-year-old male patient with a history of papillary thyroid microcarcinoma treated with left thyroidectomy presented with a spontaneous continuous painless clicking noise and abnormal clicking movement of the larynx. **CLINICAL DISCUSSION:** CLS is a very rare condition with a very limited number of cases reported worldwide, most reported cases revealed abnormal laryngeal structural anatomy. However, our patient had normal laryngeal structures where multiple diagnostic tools (i.e.: Computed tomography,

laryngoscopy) failed to disclose causative abnormality to explain his symptoms, nor literature could reveal any previously reported similar causes or explain the causative relationship between our patient's history of thyroid malignancy or thyroidectomy with his condition. **CONCLUSION:** It is crucial to explain to patients with mild CLS that these clicking noises are safe and to provide them with information on the best possible case-dependent treatments to avoid the usually associated anxiety and psychological stress. Further observations and research are needed to analyze the association between thyroid malignancy, thyroidectomy and CLS.

Nuhu, J. M., et al. (2022). "Exercise interventions used along the continuum of cancer care: A scoping review protocol." *S Afr J Physiother* **78**(1): 1819.

BACKGROUND: Cancer is one of the leading causes of death worldwide. Exercise is crucial for ameliorating the burden associated with cancer and its management. A broad review of exercise interventions for cancer patients is not available. **OBJECTIVE:** Our study aims to review the documented exercise interventions prescribed for adult cancer patients aimed at ameliorating cancer-related and cancer treatment-induced symptoms in patients along the continuum of care. **METHODS:** A three-step search strategy will be used, the research question was developed; the first step in the research process was identified and the search strategy was developed using the Participants-Concept-Context framework. English language publications from 15 electronic databases from 2011 to 2021 will be searched. The Joanna Briggs Institute methodology for scoping reviews will be to guide the review and the Preferred Reporting Items for Systematic reviews and Meta-Analyses extension for scoping reviews will be used for the report. The search strategy incorporated terms relevant to the research question. The reference lists of articles included in the review will be screened for additional papers. Searched articles will be screened to determine their eligibility for inclusion and a pretested data extraction form will be used to chart the extracted evidence. **RESULTS:** This article presents a protocol for a scoping review on exercise interventions to affect symptoms in cancer patients from diagnosis to end-of-life care. **CONCLUSION:** A broad review of exercise interventions for cancer management in adult patients will elucidate the characteristics and context of exercises used along the cancer care continuum. **CLINICAL IMPLICATIONS:** Exercise interventions used as part of cancer management will be mapped out to provide an overview of such exercise interventions. This could enhance knowledge among

exercise oncology experts regarding exercise interventions for different cancer patient populations.

Osowiecka, K., et al. (2023). "Is It Possible to Notice the Unmet Non-Medical Needs among Cancer Patients? Application of the Needs Evaluation Questionnaire in Men with Lung Cancer." *Curr Oncol* **30**(3): 3484-3493.

BACKGROUND: Lung cancer is the most common cause of cancer death worldwide. It is the most frequently diagnosed cancer in men. Lung cancer causes not only physical symptoms related to the disease itself and its treatment but also numerous mental, social and spiritual problems. The aim of the study was to assess non-medical needs among male lung cancer patients during oncological treatment. **MATERIALS AND METHODS:** The study was conducted on a group of 160 men (mean age 67 years) treated for lung cancer from June 2022 until November 2022 in 5 oncological centers in Poland. The Needs Evaluation Questionnaire (NEQ) was used. The NEQ explores five areas of patients' needs: informative, connected with assistance/care, relational, material and psycho-emotional support. **RESULTS:** All participants (except one) expressed some unmet non-medical needs (mean and median 11). Male lung cancer patients indicated informative needs most frequently. There were no significant differences between expressed unmet needs based on age, place of residence, professional activity or marital status. **CONCLUSIONS:** The NEQ seems to be a proper instrument to explore the non-medical needs of cancer patients. Adequate measures to address the unmet needs of lung cancer patients could contribute to an improved quality of life.

Pinucci, I., et al. (2023). "Insomnia among Cancer Patients in the Real World: Optimising Treatments and Tailored Therapies." *Int J Environ Res Public Health* **20**(5).

BACKGROUND: Insomnia is commonly reported by cancer patients. Its multifaceted pathophysiology makes this symptom a complex challenge for the clinician, who should bear in mind the manifold world of causes and consequences of sleep disturbances in these patients and the importance of accurate treatment that should consider the frequent co-prescription of multiple medications. With our work, we aim to provide a tool to better master the treatment of this symptom in cancer patients, considering the gap between clinical and pharmacodynamic knowledge about the efficacy of different molecules and evidence-based prescribing. **METHODS:** A narrative review of the studies investigating the pharmacological treatment of insomnia in cancer patients was conducted. Three

hundred and seventy-six randomised controlled trials (RCTs), systematic reviews and meta-analyses were identified through PubMed. Only publications that investigated the efficacy of the pharmacological treatment of insomnia symptoms in cancer patient were considered. **RESULTS:** Among the 376 publications that were individuated, fifteen studies were eligible for inclusion in the review and were described. Pharmacological treatments were outlined, with a broad look at specific clinical situations. **CONCLUSIONS:** The management of insomnia in cancer patients should be personalised, as is already the case for the treatment of pain, taking into account both the pathophysiology and the other medical treatments prescribed to these patients.

Pitanupong, J., et al. (2023). "Prevalence and associated factors of depressive symptoms among patients with cancer receiving radiotherapy in southern Thailand: a university hospital-based cross-sectional study." *BMC Palliat Care* **22**(1): 25.

BACKGROUND: Depression in patients with cancer is frequently underestimated and causes major suffering to patients and families. This study purposed to determine the prevalence of, and factors associated with, depressive symptoms among Thai patients with cancer receiving radiotherapy. The results could promote and optimize the quality of life for patients with cancer. **METHODS:** A cross-sectional study explored outpatients with cancer at Songklanagarind Hospital; from May to July 2022. The questionnaires inquired about: (1) demographic and personal data, (2) The Patient Health Questionnaire-9 (PHQ-9) Thai version, (3) Verbal Numerical Rating Scale (VNRS), and (4) The meaning in life questionnaire (MLQ). Patient demographics and depressive symptoms were analyzed using the descriptive statistic method and reported as: proportion, frequency, median and interquartile range (IQR). The analysis of the association between independent variables and depressive symptoms was conducted using multiple logistic regression, and performed by R Foundation for Statistical Computing version 4.1.2. All confidence intervals (CIs) were calculated at the 2-sided, 95% level. **RESULTS:** There were 113 Thai outpatients with cancer who participated in this study. The majority of them were female (61.1%), and the overall mean age was 56.2 +/- 13.6 years. The participants' cancer staging was stage 2 and 3 (31.0%, and 32.7%, respectively). No participants had experienced major depression (PHQ-9 score of nine or greater), and all of them were mild (23.0%) or no/minimal depression (77.0%). Fifty-four participants (47.8%) were free of pain, with half of them (50.4%) having insomnia. Most of them had a

high score in all subparts of meaning in life. The factors associated with mild depression were the history of hospitalization, the perception of one's health, the presence of physical symptoms, and pain. **CONCLUSION:** In this study, all cancer participants who received radiotherapy had either no/minimal or mild depression. No participants had major depression. Most participants had meaning in their life; however, over half of them still experienced pain and insomnia. To optimize the quality of life, and prevent depression, physical symptoms, and pain should ensure they receive adequate management. Additionally, feeling meaningful in life, and satisfaction in one's health should also be promoted.

Qin, L., et al. (2023). "Liver failure as the initial presentation in cancer of unknown primary: a case report." *BMC Infect Dis* **23**(1): 363.

BACKGROUND: Liver failure is severe hepatic cellular damage caused by multiple factors that leads to clinical manifestations. Hepatic infiltration by malignancy is rarely reported as a cause of liver failure. **CASE PRESENTATION:** A 51-year-old male patient was admitted to the Wuhan Union Hospital complaining of bloating and jaundice. He had been diagnosed with polymyositis ten prior and was taking oral glucocorticoids. Physical examination revealed seroperitoneum and icteric sclera; laboratory tests revealed liver dysfunction, a coagulopathy, and negative results for the common causes of liver failure. Moreover, an ascitic tap and bone marrow aspirate and trephine confirmed a metastatic, poorly differentiated adenocarcinoma. These findings indicate that malignant infiltration is the most likely cause of liver failure. Regrettably, the patient refused complete liver and lymph node biopsies and was discharged on day 31. **CONCLUSION:** Clinicians should consider the possibility of malignant infiltration when approaching a case of liver failure with prodromal symptoms or imaging abnormalities, especially in patients with autoimmune diseases, such as polymyositis.

Qiu, Z., et al. (2023). "Babao Dan Alleviates Cancer Cachexia in Mice Via Inhibiting IL-6/STAT3 Signaling Pathway." *Integr Cancer Ther* **22**: 15347354231168369.

BACKGROUND: Cancer cachexia is a common but severe condition that causes muscle wasting, body weight loss, and progressive functional impairment, affecting over 50% of cancer patients. Currently, there are no effective treatments that can alleviate cachexia, and hence the discovery of new therapeutics that can effectively prevent or even reverse cancer cachexia is crucial. Babao Dan (BBD)

is a Traditional Chinese Medicine (TCM) formula that has been used clinically in combating various cancers, however, its therapeutic potential in alleviating cancer cachexia remains unexplored. Our current study aims to determine the anti-cachectic effects of BBD treatment in alleviating cancer cachexia, as well as determining the underlying mechanisms involved. **METHODS:** Mouse models of cancer cachexia were induced via implantation of CT26 colon adenocarcinoma cells, and the anti-cachectic effects and mechanisms of BBD were determined via examinations of body weight and muscle mass, as well as serum and muscle markers of cachexia and muscle atrophy. **RESULTS:** CT26 tumor implantation reduced in the rapid occurrence of cancer cachexia characterized by marked reductions in body weight and muscle mass, functional decrease in muscle function and accelerated deaths. BBD administration not only demonstrated robust anti-cachectic ability via preventing decreases in body weight, muscle mass, and muscle atrophy, but also markedly prolonged survival. The effects of BBD in alleviating cancer cachexia and its associated adverse effects were due to its ability in preventing the activation of IL-6/STAT3 signaling post-CT26 tumor implantation. **CONCLUSION:** Our findings demonstrated the robust ability of BBD in preventing cancer cachexia and alleviating the main cachexia-induced symptoms as well as prolonging survival via inhibiting activation of IL-6/STAT3 signaling pathway. Therefore, our study demonstrating the strong anti-cachectic effects of BBD in mice may provide a theoretical basis for the use of BBD as a safe and effective drug in the treatment of cancer cachexia.

Rogers, L. Q., et al. (2023). "Physical activity intervention benefits persist months post-intervention: randomized trial in breast cancer survivors." *J Cancer Surviv* **17**(6): 1834-1846.

PURPOSE: Determine durable effects of the 3-month Better Exercise Adherence after Treatment for Cancer (BEAT Cancer) physical activity (PA) behavior change intervention 12 months post-baseline (i.e., 9 months after intervention completion). **METHODS:** This 2-arm multicenter trial randomized 222 post-primary treatment breast cancer survivors to BEAT Cancer (individualized exercise and group education) vs. usual care (written materials). Assessments occurred at baseline, 3, 6, and 12 months, with the 12 months assessment reported here. Measures included PA (accelerometer, self-report), cardiorespiratory fitness, muscle strength, body mass index, Functional Assessment of Cancer Therapy (FACT), SF-36, fatigue, depression, anxiety, satisfaction with life, Pittsburgh Sleep Quality Index

(PSQI), lower extremity joint dysfunction, and perceived memory. **RESULTS:** Adjusted linear mixed-model analyses demonstrated statistically significant month 12 between-group differences favoring BEAT Cancer for weekly minutes of moderate-to-vigorous self-report PA (mean between-group difference (M) = 44; 95% confidence interval (CI) = 12 to 76; p = .001), fitness (M = 1.5 ml/kg/min; CI = 0.4 to 2.6; p = .01), FACT-General (M = 3.5; CI = 0.7 to 6.3; p = .014), FACT-Breast (M = 3.6; CI = 0.1 to 7.1; p = .044), social well-being (M = 1.3; CI = 0.1 to 2.5; p = .037), functional well-being (M = 1.2; CI = 0.2 to 2.3; p = .023), SF-36 vitality (M = 6.1; CI = 1.4 to 10.8; p = .011), fatigue (M = - 0.7; CI = - 1.1 to - 0.2; p = .004), satisfaction with life (M = 1.9; CI = 0.3 to 3.5; p = .019), sleep duration (M = - 0.2; CI = - 0.4 to - 0.03, p = .028), and memory (M = 1.1; CI = 0.2 to 2.1; p = .024). **CONCLUSIONS:** A 3-month PA intervention resulted in statistically significant and clinically important benefits compared to usual care at 12 months. **IMPLICATIONS FOR CANCER SURVIVORS:** Three months of individualized and group PA counseling causes benefits detectable 9 months later. **TRIAL REGISTRATION:** ClinicalTrials.gov NCT00929617 (<https://clinicaltrials.gov/ct2/show/NCT00929617> ; registered June 29, 2009).

Sahyon, H. A., et al. (2023). "Avocado peel extract loaded on chitosan nanoparticles alleviates urethane toxicity that causes lung cancer in a mouse model." *Int J Biol Macromol* **234**: 123633.

Lung cancer progresses without obvious symptoms and is detected in most patients at late stages, causing a high rate of mortality. Avocado peels (AVP) were thought to be biowaste, but they have antioxidant and anticancer properties in vitro. Chitosan nanoparticles (Cs-NPs) were loaded with various plant extracts, increasing their in vitro and in vivo anticancer activities. Our goal was to load AVP onto Cs-NPs and determine the role of AVP-extract or AVP-loaded Cs-NPs in controlling the progression of lung cancer caused by urethane toxicity. The AVP-loaded chitosan nano-combination (Cs@AVP NC) was synthesized and characterized. Our in vitro results show that Cs@AVP NC has higher anticancer activity than AVP against three human cancer cell lines. The in vivo study proved the activation of apoptosis in lung cancer cells with the Cs@AVP NC oral treatment more than the AVP treatment. Additionally, Cs@AVP NC-treated animals showed significantly higher p53 and Bax-expression levels and lower NF-kappaB p65 levels in their lung tissues than in positive control animals. In conclusion, our study demonstrated the superior anticancer potency of Cs@AVP NC over AVP extract and its ability to

inhibit lung cancer proliferation. Therefore, oral consumption of Cs@AVP NC might be a promising treatment for lung cancer.

Salifu, Y., et al. (2023). "'Out of the frying pan into the fire': a qualitative study of the impact on masculinity for men living with advanced prostate cancer." *Palliat Care Soc Pract* **17**: 26323524231176829.

BACKGROUND: Studies have highlighted how advanced prostate cancer causes biographical disruption and presents challenges to masculine identities for men. This article draws on a wider study that focused on the experiences of men living with advanced prostate cancer and their caregivers. Although men's experience of advanced illness is not overlooked in the literature, only a small body of work has taken an in-depth look at men's experiences with advanced prostate cancer and their caregivers in a non-Westernised cultural and social context. **OBJECTIVE:** To explore how advanced prostate cancer impacts on men's masculine identity from the perspective of patients and their caregivers. **METHODS:** A qualitative study of men living with advanced prostate cancer (n = 23) and family caregivers (n = 23) in Ghana. We used the Consolidated Criteria for Reporting Qualitative Studies (COREQ) as the reporting guideline. **RESULTS:** The findings from this study highlight profound challenges for most men to their masculine identities, from both the treatment and the symptoms of advanced prostate cancer within a non-Westernised, patriarchal society. Four main themes were developed. These were the impact on masculinity in terms of: (1) physical changes, (2) sexual ability, (3) socio-economic roles and (4) expressing emotions. Changes in physical appearance, feeling belittled, having no active sexual life and the inability to continue acting as provider and protector of the family made some men describe their situation as one of moving out of the 'frying pan into the fire'. **CONCLUSION:** This study revealed the impact of advanced prostate cancer on masculine identity. These narratives add a new dimension to what is already known about the impacts on men's masculine identities when dealing with advanced prostate cancer. This knowledge can help improve the care provided to men with advanced prostate cancer with emphasis on the cultures, beliefs and aspirations of these men and their caregivers.

Schubert, M., et al. (2023). "Challenges in the Diagnosis and Individualized Treatment of Cervical Cancer." *Medicina (Kaunas)* **59**(5).

Cervical cancer is still the fourth most common cancer in women throughout the world; an

estimated 604,000 new cases were observed in 2020. Better knowledge of its pathogenesis, gained in recent years, has introduced new preventive and diagnostic approaches. Knowledge of its pathogenesis has made it possible to provide individualized surgical and drug treatment. In industrialized countries, cervical cancer has become a less frequent tumor entity due to the accessibility of the human papilloma virus vaccination, systematic preventive programs/early detection programs, health care infrastructure and the availability of effective therapy options. Nevertheless, globally, neither mortality nor morbidity has been significantly reduced over the past 10 years, and therapy approaches differ widely. The aim of this review is to address recent advances in the prevention, diagnostic investigation and treatment of cervical cancer globally, focusing on advances in Germany, with a view toward providing an updated overview for clinicians. The following aspects are addressed in detail: (a) the prevalence and causes of cervical cancer, (b) diagnostic tools using imaging techniques, cytology and pathology, (c) pathomechanisms and clinical symptoms of cervical cancer and (d) different treatment approaches (pharmacological, surgical and others) and their impact on outcomes.

Semenenko, E., et al. (2023). "Review of psychological interventions in patients with cancer." *Support Care Cancer* **31**(4): 210.

OBJECTIVE: Cancer is one of the leading causes of mortality in the world and also causes morbidity and deterioration in the mental health of patients and their caregivers. The most commonly reported psychological symptoms include anxiety, depression, and the fear of recurrence. The purpose of this narrative review is to elaborate and discuss the effectiveness of the different interventions employed and their utilities in clinical practice. **METHODS:** Scopus and PubMed databases were searched, with a timeframe from 2020 to 2022, to identify randomised controlled trials, meta-analyses, and reviews and reported using PRISMA guidelines. Articles were searched by the following keywords: "cancer, psychology, anxiety, and depression". An additional search was performed with the keywords "cancer, psychology, anxiety, depression, and [intervention name]". The most popular psychological interventions were included in these search criteria. **RESULTS:** A total of 4829 articles were retrieved by the first preliminary search. After reducing duplicates, 2964 articles were assessed for inclusion according to eligibility criteria. After the full-text screening, 25 final articles were chosen. To systematise psychological interventions as described in the literature, the authors have divided them into 3 broad

categories, each type targeting a specific domain of mental health: cognitive-behavioural, mindfulness, and relaxation. **CONCLUSION:** The most efficient psychological therapies, as well as therapies which require more extensive research, were outlined in this review. The authors discuss the necessity of primary assessment of patients and whether they require the help of a specialist. With the limitations of the potential risk of bias, an overview of different therapies and interventions targeting various psychological symptoms is outlined.

Sharma, T., et al. (2023). "Current and emerging biomarkers in ovarian cancer diagnosis; CA125 and beyond." *Adv Protein Chem Struct Biol* **133**: 85-114.

Ovarian cancer (OC) is one of the most common causes of cancer-related death in women worldwide. Its five-year survival rates are worse than the two most common gynecological cancers, cervical and endometrial. This is because it is asymptomatic in the early stages and usually detected in the advanced metastasized stage. Thus, survival is increasingly dependent on timely diagnosis. The delay in detection is contributed partly by the occurrence of non-specific clinical symptoms in the early stages and the lack of effective biomarkers and detection approaches. This underlines the need for biomarker identification and clinical validation, enabling earlier diagnosis, effective prognosis, and response to therapy. Apart from the traditional diagnostic biomarkers for OC, several new biomarkers have been delineated using advanced high-throughput molecular approaches in recent years. They are currently being clinically evaluated for their true diagnostic potential. In this chapter, we document the commonly utilized traditional screening markers and recently identified emerging biomarkers in OC diagnosis, focusing on secretory and protein biomarkers. We also briefly reviewed the recent advances and prospects in OC diagnosis.

Suto, H., et al. (2023). "Slowly Progressive Bone Marrow Metastasis of Gastric Cancer Followed-up Without Treatment." *In Vivo* **37**(3): 1389-1393.

BACKGROUND/AIM: Bone marrow metastasis (BMM) of gastric cancer (GC) is complicated by disseminated intravascular coagulation syndrome (DIC), which is more prominent in poorly differentiated carcinoma. This is one of the first case reports of a slowly progressing BMM of GC after approximately 1 year of follow-up without treatment. **CASE REPORT:** A 72-year-old woman underwent total gastrectomy and splenectomy for GC in February 2012. The pathological diagnosis was that of a moderately differentiated adenocarcinoma. Five years later in December 2017,

she developed anemia; however, its cause remained unknown. Due to worsening of the anemia, the patient visited the Kakogawa Central City Hospital in October 2018. Bone marrow biopsy revealed an infiltration of caudal type homeobox 2-positive cancer cells, and our diagnosis was BMM of GC. There was no DIC. The incidence of BMM is high in well- or moderately differentiated breast cancer but rarely causes DIC. **CONCLUSION:** As with breast cancer, in moderately differentiated cancer cells, BMM of GC may progress slowly after the appearance of symptoms without causing DIC.

Tay, N., et al. (2022). "Chemotherapy-induced peripheral neuropathy in children and adolescent cancer patients." *Front Mol Biosci* **9**: 1015746.

Brain cancer and leukemia are the most common cancers diagnosed in the pediatric population and are often treated with lifesaving chemotherapy. However, chemotherapy causes severe adverse effects and chemotherapy-induced peripheral neuropathy (CIPN) is a major dose-limiting and debilitating side effect. CIPN can greatly impair quality of life and increases morbidity of pediatric patients with cancer, with the accompanying symptoms frequently remaining underdiagnosed. Little is known about the incidence of CIPN, its impact on the pediatric population, and the underlying pathophysiological mechanisms, as most existing information stems from studies in animal models or adult cancer patients. Herein, we aim to provide an understanding of CIPN in the pediatric population and focus on the 6 main substance groups that frequently cause CIPN, namely the vinca alkaloids (vincristine), platinum-based antineoplastics (cisplatin, carboplatin and oxaliplatin), taxanes (paclitaxel and docetaxel), epothilones (ixabepilone), proteasome inhibitors (bortezomib) and immunomodulatory drugs (thalidomide). We discuss the clinical manifestations, assessments and diagnostic tools, as well as risk factors, pathophysiological processes and current pharmacological and non-pharmacological approaches for the prevention and treatment of CIPN.

Ulusan Bagci, O., et al. (2023). "Molecular Prevalence of Microsporidia Infection in Patients with Lung Cancer." *Am J Trop Med Hyg* **108**(5): 895-900.

Infections are still among the most important causes of morbidity and mortality in patients with lung cancer, which has the highest rate of cancer-related deaths in the world. Microsporidia, which are opportunistic parasitic fungi, primarily localize to the intestine by ingestion but can disseminate to the respiratory tract or can be acquired by spore

inhalation. Cancer patients are at higher risk for microsporidia, a life-threatening infection, than the normal population is. We aimed to characterize the prevalence of microsporidia infection for the first time by evaluating the intestinal and respiratory tracts of patients with lung cancer. In this study, we investigated 98 patients with lung cancer and 103 healthy individuals for microsporidia infection and evaluated the clinical findings of patients who were found to be positive. Sputum and stool samples were tested by microscopic examination, in addition to pan-microsporidia and genus-specific polymerase chain reactions. Nine patients with lung cancer had positive results for microsporidia (9.2%), which was significantly higher than the rate in healthy individuals ($P = 0.008$), and most of them had clinical findings. Among these positive patients, polymerase chain reaction revealed microsporidia in the sputum samples of seven patients, the stool sample of one patient, and both the sputum and stool samples of one patient. *Encephalitozoon cuniculi* was identified as the predominant pathogen in 87.5% (7/8) of positive sputum samples. Microsporidia infection was significantly associated with advanced stages of cancer. However, in the control group, *Encephalitozoon intestinalis* was detected in the stool sample of an individual without clinical symptoms. Microsporidia, especially *E. cuniculi*, should be considered as a cause of respiratory tract infection as well as intestinal infection in cancer patients and should be screened in respiratory samples of these patients when they have pulmonary symptoms.

van Hoogstraten, L. M. C., et al. (2023). "Global trends in the epidemiology of bladder cancer: challenges for public health and clinical practice." *Nat Rev Clin Oncol* **20**(5): 287-304.

Bladder cancer is among the ten most common cancers globally, causes considerable morbidity and mortality and is, therefore, a substantial burden for health-care systems. The incidence of bladder cancer is affected by demographic trends, most notably population growth and ageing, as well as exposure to risk factors, especially tobacco smoking. Consequently, the incidence has not been stable throughout the world over time, nor will it be in the near future. Further primary prevention efforts are of the utmost importance to reduce the medical and financial burden of bladder cancer on populations and health-care systems. Simultaneously, less-invasive and lower-cost approaches for the diagnosis of both primary and recurrent bladder cancers are required to address challenges posed by the increasing shortage of health-care professionals and limited financial resources worldwide. In this regard, urinary

biomarkers have demonstrated promising diagnostic accuracy and efficiency. Awareness of the risk factors and symptoms of bladder cancer should also be increased in society, particularly among health-care professionals and high-risk groups. Studies investigating the associations between lifestyle factors and bladder cancer outcomes are scarce and should be a research priority. In this Review, we outline global trends in bladder cancer incidence and mortality, and discuss the main risk factors influencing bladder cancer occurrence and outcomes. We then discuss the implications, challenges and opportunities of these epidemiological trends for public health and clinical practice.

Wang, F., et al. (2023). "Real-world data on severe lung cancer: a multicenter retrospective study." *Transl Lung Cancer Res* **12**(3): 460-470.

BACKGROUND: Severe lung cancer is a novel concept that describes a patient with poor performance status (PS; 2-4) but with a high probability of receiving survival benefit and improvement in the PS score. However, there is currently no relevant research or real-world data on those with severe lung cancer, such as incidence, cause, clinical features, and risk factors. **METHODS:** The data from patients with advanced lung cancer attending multiple centers from January 1, 2022, to June 30, 2022, were collected for a cross-sectional study. In addition, data from fatal cases from January 1, 2019, to June 30, 2022, were retrospectively collected as another cohort. And we developed a questionnaire to assess clinicians' mastery of severe lung cancer. **RESULTS:** Three participating institutes enrolled the data set of 1,725 patients, and the dataset of 269 fatal cases were included in another cohort; the incidence of severe lung cancer was 13.10% and 37.55%, respectively. Severe lung cancer patients were mainly stage IV elderly male patients without gene mutation and a history of resection. And the proportion of smoking and comorbidities in severe lung cancer patients is more than in non-severe lung cancer patients (50.4% vs. 40.8%, $P=0.006$; 46.9% vs. 36.4%, $P=0.002$). Treatment-related adverse events (AEs) (46.0%) accounted for the largest proportion of the primary causes of severe lung cancer in the cross-sectional study, while cancer-related symptoms (54.5%) accounted for the largest proportion of the primary causes of severe lung cancer in the 101 fatal cases. For the fatal cases, the overall survival of severe lung cancer patients caused by cancer-related symptoms was longer than that caused by treatment-related AEs (8 vs. 3 months; $P=0.019$). A total of 616 clinicians completed the questionnaire; 90.26% of clinicians agreed with the concept of severe lung cancer. **CONCLUSIONS:** The incidence of severe

lung cancer cannot be ignored based on real-world data. Treatment-related AEs are gradually account for more of the causes of severe lung cancer, surpassing cancer-related symptoms and comorbidities. Furthermore, the prognosis of patients with advanced lung cancer who develop severe lung cancer due to treatment-related AEs is worse than cancer-related symptoms.

Yamamichi, G., et al. (2023). "Diagnosing and Prognosing Bone Metastasis in Prostate Cancer: Clinical Utility of Blood Biomarkers." *Anticancer Res* **43**(1): 283-290.

Bone metastasis (BM) may occur in any type of cancer. The diagnosis of patients with BM has increased due to improved imaging technologies and advances in cancer drug therapy that have prolonged the survival time of cancer patients. BM may be asymptomatic in the early stages; however, as the disease progresses, it causes pain, fracture, neurological symptoms associated with spinal cord compression, hypercalcemia, and other specific symptoms that significantly impair the patient's quality of life (QOL). Imaging modalities have disadvantages, such as high cost, radiation exposure, and bone pain associated with holding posture for imaging test; further, they are time-consuming. Hence, patients with BM require convenient and useful biomarkers. However, no blood biomarkers generally useful for diagnosis and therapeutic monitoring of BM are established. Prostate cancer (PC) and breast cancer, in particular, are among the most prone to BM because BM occurs in approximately 70% of patients with advanced disease. Herein, we reviewed various potential bone turnover markers and liquid biopsy for diagnosis and prognosis prediction in patients with BM of PC based on PubMed literature search. The usefulness of conventional bone turnover markers of BM in PC is limited, and cut-off values vary. In the future, the creation of algorithms using these conventional markers and multiple tests, such as liquid biopsy and imaging tests, will help to develop highly accurate techniques for the diagnosis of BM.

Yaman, A., et al. (2022). "Clinical awareness and knowledge of breast cancer-related lymphedema among a group of psychiatrists in Turkey - An online survey." *Niger J Clin Pract* **25**(10): 1654-1659.

BACKGROUND: The point-of-view and role of psychiatrists are important in the clinical care of breast-cancer-related-lymphedema (BCRL) patients to set up management and rehabilitation strategies. **AIM:** The aim of this study was to determine the awareness and knowledge of BCRL among a group of psychiatrists regarding its causes,

symptoms, treatment, and management in Turkey. **SUBJECTS AND METHODS:** The participants were asked to answer a 10-min web survey, including 19 questions. In addition to their demographical and logistic properties, the questionnaire elicited data on the knowledge, education, and awareness of the psychiatrists on the diagnosis and treatment of BCRL. **RESULTS:** In total, 127 female and 44 male psychiatrists completed the survey. Also, 71% of the participants were aged between 31 and 50 years, mostly working in metropolises and tertiary hospitals for more than 5 years. Further, 63.7% of the participants expressed that they had knowledge about BCRL; however, detailed knowledge of lymphedema treatment was low, as 67.9% of the psychiatrists reported that they had no comprehensive information about complete-decongestive-therapy. Nearly half of the participants did not believe that once lymphedema has clinically manifested, a patient can eventually be treated for BCRL. Also, 87% of the participants had attended less than two educational events related to BCRL in the past 5 years. In all, 94.7% of the physicians determined a great need for education and awareness of the current literature about BCRL. **CONCLUSION:** The awareness and knowledge of lymphedema is moderate but detailed information, knowledge, and education about lymphedema and its treatment are low among a group of psychiatrists. With the growing number of breast cancer survivors, psychiatrists' awareness and education about BCRL are crucial to improve the quality of care of patients.

Zanon, J. R., et al. (2023). "Emphysematous pyelonephritis after urinary diversion by percutaneous nephrostomy in patient with advanced cervical cancer: A case report." *SAGE Open Med Case Rep* **11**: 2050313X231182532.

Emphysematous pyelonephritis is a severe kidney infection that is common in women and patients with diabetes mellitus, but rare in cancer patients. A 64-year-old patient with advanced uterine cervical cancer developed emphysematous pyelonephritis after urine diversion by percutaneous nephrostomy of the left kidney, which is a possible approach to this infection. Antibiotic therapy was started to achieve clinical improvement and preserve renal function, and radical nephrectomy was not an option due to the functional exclusion of the contralateral kidney. The patient progressed with worsening renal function; thus, she started outpatient hemodialysis, with improvement of the uremic encephalopathy. She died 7.7 months after admission, 1 month after treatment for emphysematous pyelonephritis. Treatment should be adjusted to the patients' needs, including maintenance of

hemodialysis to improve symptoms. Further investigation is needed to identify possible causes and prevent emphysematous pyelonephritis in cancer patients.

Zhong, Y., et al. (2023). "Organising pneumonia caused by hormone (tamoxifen) therapy after radiotherapy for breast cancer: a case report and review of the literature." *Ann Transl Med* **11**(9): 323.

BACKGROUND: Five-year treatment with tamoxifen (TAM) has been the traditional standard of care for breast cancer. Organising pneumonia (OP) is a rare but significant complication of radiation therapy for breast cancer. The effect of TAM leading to OP has not yet been clearly documented. **CASE DESCRIPTION:** This report describes the case of a 38-year-old female who developed progressive aggravation of round-like patchy bilateral pulmonary infiltrated with a reverse halo sign but without any clinical symptoms 5 months after TAM therapy, following breast-conserving surgery and radiotherapy (RT) for breast carcinoma. A lung biopsy was performed and revealed a histological pattern of OP. TAM therapy was discontinued, and subsequent gradual radiological improvement was observed. As there was no proof for TAM had caused the incident, TAM was re-administrated. Eight months after reinstatement of TAM, the same patchy migratory bilateral pulmonary infiltrated with reverse halo sign was found on chest CT with the patient claiming no discomforts nor any clinical symptoms. The diagnosis of TAM-related OP was made based on the exclusion of other causes and recurrence with the re-administration of TAM. The multidisciplinary team (MDT) concluded that TAM should be withdrawn and a "wait-and-see" approach was taken after a comprehensive assessment, instead of altering the medication or performing prophylactic mastectomy. **CONCLUSIONS:** The withdrawal and rechallenge of TAM strongly suggest that it may play a role as a cofactor in the occurrence of OP after RT for breast cancer, and RT may also be a cofactor in the occurrence of OP. It is extremely important to be alerted to the possibility of OP after concurrent or sequential hormonal therapy and RT.

The above contents are the collected information from Internet and public resources to offer to the people for the convenient reading and information disseminating and sharing.

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