Editorial

Prezados Colegas,

A abordagem multidisciplinar do câncer tem sido considerada um dos maiores avanços no tratamento oncológico e seus benefícios aos pacientes estão fartamente documentados na literatura científica. Além disso, acompanhar a grande quantidade e velocidade de informação criada atualmente na área de Oncologia, torna-se uma tarefa cada vez mais complexa e difícil.

Diante deste contexto, a Sociedade Brasileira de Oncologia Clínica (SBOC), a Sociedade Brasileira de Cirurgia Oncológica (SBCO) e a Sociedade Brasileira de Radioterapia (SBRT) reafirmaram seu compromisso multidisciplinar realizando a II Semana Brasileira da Oncologia. A programação foi preparada com objetivo prioritário de abordar temas que impactam a prática diária em Oncologia, além de buscar uma assistência oncológica da mais alta qualidade aos pacientes. O evento contou com atividades inovadoras e, mais uma vez, com a participação de profissionais de excelência, do Brasil e do exterior.

A fim de que todos possam avaliar os estudos apresentados na II Semana, que contou com mais de 700 trabalhos apresentados, preparamos esse Editorial especial da BJO.

Agradecemos a participação de todos os profissionais de todas as regiões do Brasil que estiveram presentes na II Semana Brasileira da Oncologia. Estamos certos que esse grande evento vem contribuindo cada vez mais para o fortalecimento da Oncologia Brasileira.

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TEMÁRIO: CUIDADOS PALIATIVOS/SUPORTE/TERMINALIDADE
CÓDIGO: 88387

CHALLENGES IN THE EDMONTON SYMPTOM ASSESMENT SCALE (ESAS) IMPLEMENTATION IN THE ONCOLOGY AND HEMATOLOGY UNIT BY THE INTEGRATIVE MEDICINE GROUP OF A PRIVATE TERCIARY HOSPITAL IN SÃO PAULO: EXPERIENCE REPORT

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Case presentation: The use of complementary and integrative medicine (CIM) by cancer patients is well-known in the oncology setting, mostly related to the desire to increase the chances of cure, minimize side effects and also participate actively of their salutogenesis. The Edmonton Symptom Assesment Scale (ESAS) has been used as self-reported symptoms tool in Integrative Medicine Centers in the United States. We describe our recent experience in implementing the ESAS in the oncology and hematology unit for inpatients pre and post integrative therapy (IT) performed by integrative medicine group (IMG). **Discussion:** The IMG acts in the oncology and hematology center since 2007 offering IT to all inpatients with no charge to patients and caregivers. The IT are individualized non-invasive mind-body thecniques, adapted to patients needs and limitations, including gentle movements and breathing exercises based on yoga, touch therapy and relaxation thecniques conducted by therapists voice, during 20-30minutes. From 12th June to 19th July 2019 the ESAS was implemented pre and post IT. The first step before including the scale in the routine was education of the IMG with discussion of ESAS by a physician and nurse experts in palliative care. None of the four mind-body therapists had ever worked at a hospital or with ESAS before joining IMG. Secondly a standardized speech was stablished with clear explanation to patients of the importance of the evaluation and their voluntary participation with no implications if they refuse to fill the scale. An extra note was added to the ESAS with observation gap to better understand the challenges during the sessions. Eighty ESAS were completed during the 40 sessions to 31 adult patients. Twenty were filled by patients and 17 by therapists. Ten patients slept during the session and 7 didnt filled the post ESAS immediatly after the end of the session. Two patients couldnt understand the instructions due to confuse state and 2 patients refused to fill the post ESAS. One patient didnt understand the intruction. **Final Comments:** In our experience implementing the ESAS in the routine of the IMG represents a challenge regarding the lack of experience of the group with symptom scales, patient approach and sleeping during the sessions. However, the evaluation was well-accepted by the group and patients to better understand the benefits of IT and also to facilitate the communication with the multidisciplinary and physician teams.

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EPIMIOLOGIC PROFILE OF OCTAGENARIANS TREATED IN TWO DIFFERENT PRIVATE HEALTH INSTITUTIONS IN FEDERAL DISTRICT, BRAZIL

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Introduction: The aging population is a phenomenon that takes place worldwide, nonetheless some countries that had never a huge elderly population will face out a major change in its population aging distribution, likewise what Brazil is facing nowadays. In this context, it will be more frequent that elderly people will harbor chronic diseases, like cancer. This will make the diagnosis of cancer more common even in very elderly patients. **Objectives:** Report the epidemiologic profile of patients 80 years-old or above treated in two private health institutions located in Federal District, showing the more frequent tumor types diagnosed, age at diagnosis, therapeutic objectives. The data of all patients that had received any systemic treatment for any oncologic condition between 2013 and 2019 are reported. **Methods:** Data of all patients that had received any systemic treatment for any oncologic condition, by any route between 2013 and 2019 in the Cancer Center of Brasilia and Cancer Hospital Anchieta were collected and specific information regarding age ate diagnosis, tumor type, tumor staging, sex were extracted for this analysis. **Results:** 162 different patients were identified according to the search performed. Nevertheless, 5 patiens were excluded of the report either because of a lack of minimal data available, either for the absence of a cancer diagnosis confirmation. Among 157 patients, there was a slight predominance of women (53,%% vs 46,5%). 75,5% of the population had 80 85 yo, 22,2% 86 90 yo and 3,3% had 91 yo and above (range: 80 100 yo). The majority of patients had a localized disease (50,2%) and 41,4 had stage IV disease. The most common tumors were gastrointestinal tumors, followed by hematologic malignancies, prostate cancer, breast, lung and bladder cancer, respectively. **Conclusion:** Few series report the profile of elderly patients. This data had a huge amount of very old patients and it was possible to notice a different type of the most prevalent conditions in this group, differently what is seen in younger counterparts.

Notedly, this higher frequency of hematologic conditions is noteworthy. Finally, a slight predominance of female elderly patients, likewise a great proportion of patients with stage IV disease is somewhat different what is its usually seen in the general population treated in private health institutions in Brazil.

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NATIONAL SCIENTIFIC PRODUCTION ON CAREGIVERS OF CANCER PATIENTS IN PALLIATIVE CARE: INTEGRATIVE LITERATURE REVIEW

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Introduction: Cancer patients require great care and attention, because usually the disease and the treatments deteriorate their quality of life. In this perspective, palliative care is highlighted as an approach to care for patients and family caregivers. **Objective:** To identify in the national scientific literature what are the caregivers experiences regarding care for cancer patients in palliative care. **Method:** Integrative literature review from the leading question < < What was produced in Brazil in relation to caregivers of cancer patients in palliative care? > > The databases consulted were Latin-american and Caribbean Health Sciences (LILACS) and Health Information from the National Library of Medicine (PUBMED). The descriptors in Health sciences (DeCS) used were: palliative care, caregiver and cancer. **Results:** Thirteen articles were eligible between 2011 and 2018. Regarding the "experiences of cancer patients´caregivers in palliative care" it was found that the choice to be a caregiver, sometimes, is not voluntary and there isn´t always a satisfaction in caring. In relation to the content "burden of cancer patients´ caregivers in palliative care" it was noted that the routine of the home caregiver is heavy and hard, and often the family member voids himself to care for the patient. The content "validation of instruments to assess the comfort of home caregivers" demonstrated the importance of methodological studies that are dedicated to adapting and validating instruments that assess the situation of caregivers and patients, so that, health interventions are planned and implemented by the professionals. **Conclusion:** The study made it possible to identify that caregivers experiences and responsibilities generate an overload that impairs self-care and physical and emotional health. For this reason, it is necessary for them to be adequately assisted. It is up to the palliative care team, not only to accompany cancer patients, but also to identify the difficulties and demands of caregivers, providing support and guiding the challenges inherent to the act of caring.

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PALLIATIVE CARE IN INTENSIVE CARE UNIT: ANALYSIS OF ONCOLOGICAL PATIENTS PROFILE

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Increase incidence of cancer and improvement of treatment led to a better management of these patients in Intensive Care Units (ICU). However, it is known that ICU admission is associated with worse prognosis, depending on the stage of disease, the acute intercurrence and organ failure number. In parallel, it is reported benefit of the integrated assessment of the palliative care team for better treatment. Objectives were to analyze the profile of oncology patients admitted in the ICU who were followed up with the palliative care team, evaluate the main changes adopted and outcomes. It is an observational, retrospective and descriptive study through the analysis of medical records during the years of 2015 to 2017. Qualitative characteristics were described with absolute and relative frequency, quantitative with summary measures and it was compared with Mann-Whitney test. A total of 67 medical records were analyzed, the majority being female and the mean age was 61.6 years. Breast cancer was the most prevalent followed by ovary and head and neck cancer. Metastatic disease accounted for 86.6% of cases. The main reason for ICU admission was sepsis and the justification for the integrated follow-up was advanced life support limitation and prioritization of comfort treatment. Changes made by the palliative team were adjustment of analgesia, sedation, reduction of hydration and volume of diet and family support. About oncology treatment, 67.2% of patients received chemotherapy, 9% received it in the last 14 days of life and 31% in the last 30 days before the onset of palliative treatment. Mean ICU stay

was 14.7 days, interval between admission in the ICU and the beginning of follow-up of palliative team was 9.2 days. About the outcomes, 34.3% of patients were discharged to the ward and 65.7% evolved to death in the ICU. Mann-Whitney test was used for comparative analysis between onset of palliative follow-up and outcome, with a mean of 6 days for discharge and 5.1 days for death, but with no statistical significance. It was verified that patients were admitted in ICU due to acute intercurrences and received recommended treatment. Presence of metastasis was not a limiting factor. However, those who evolve with poor prognostic criteria, such as multiple organ dysfunctions, should be evaluated by the palliative care team with intensivists and oncologists, for symptoms control, family support and to avoid futile life-prolonging measures.

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TEMÁRIO: CUIDADOS PALIATIVOS/SUPORTE/TERMINALIDADE
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REAL-LIFE DATA FROM AN ONCOLOGY INFIRMARY IN A BRAZILIAN UNIVERSITY-BASED TEACHING HOSPITAL

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Introduction: Oncological patients are mostly treated in ambulatorial scenarios but may demand complex in-hospital care. At our university-teaching hospital, we conduct 15.000 ambulatory consults yearly. **Objectives:** Analyze data regarding patients in need of hospital care admitted in our Oncology infirmary aiming better clinical practices, clinical support and scope for financial and structural needs for institutions. **Method:** A prospective study of 190 patients admitted for in-hospital care during a year who were stratified by diagnosis, age, sex, admission reason, duration of stay, re-admission rate and outcomes. **Results:** 97 male and 93 female patients were admitted, with a 61-year-old mean age; mean stay was 13,4 days; and re-admission rate of 9,47%. Main admission causes: Terminality [Defined by PS-ECOG = 4, with a 30 day or less estimated life expectancy]:30 patients (15,71%); total pain: 23 (12,04%); oncological emergencies [Febrile neutropenia, malignant hypercalcemia, medullar compression, superior vena cava syndrome]: 20 (10,47%); clinical deterioration [defined as worsening of patients performance or malnutrition]: 15 (7,85%); abdominal pain [without acute abdomen]: 14 (7,33%). Most common primary tumor sites were: colorectal = 30 (15,71%), breast = 28 (14,66%), stomach = 20 (10,47%), lung = 14 (7,33%), ovary = 12 (6,28%) and prostate = 10 (5,24%). **Outcomes:** 99 deaths (mortality rate 52,11%). Patients in terminality presented 90% ratio of mortality within an average of 6,6 days of hospital care. Febrile neutropenia (42,80%) and abdominal pain (35,70%) both achieved above expected mortality rates. 91 patients were discharged from hospital and went back to ambulatory care. **Conclusions:** Admission rate of 1,26%, pointing at good clinical ambulatorial practices. The mean in-hospital stay comparison between patients who were discharged and those who died, not considered terminal ill, was unexpectedly similar, 11,78 versus 13,44 days, respectively, suggesting that in-hospital care should be focused on symptoms not outcomes. Patients with febrile neutropenia and gastrointestinal cancer should be evaluated with caution due to higher than expected mortality rates.

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TRAJECTORY OF SYMPTOMS THROUGHOUT CHEMOTHERAPY: SCREENING ROUTINE USING PALLIATIVE CARE SCALE

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Background: The best strategy for maintaining quality of life is the combination of supportive care with chemotherapy in all stages of treatment. In this study we used a specific scale for palliative care seeking to describe longitudinal symptoms of patients in neoadjuvant, adjuvant and palliative chemotherapy. **Methods:** Observational study conducted in 2017 with patients on outpatient chemotherapy in a Cancer Center of Brasília (Cettro). For data collection we applied the ESAS scale (Edmonton Symptom Assessment System) in four stages throughout the treatment. We performed descriptive statistics and calculated the score from 4 to 10 (moderate/severe) in reporting ESAS symptoms. **Results:** We included 200 reviews, the mean age was 59 years, 58% were female. At the beginning of neoadjuvant chemotherapy, the highest mean of symptoms was: anxiety (36%), depression (29%), inappetence, fatigue, felling unwell and somnolence (21%). There was a decrease in emotional symptoms during the treatment, but increased fatigue, inappetence and somnolence (25%). In the finishing stages all symptoms increased

considerably except pain. At the beginning of adjuvant chemotherapy, the highest symptoms were: anxiety (60%), fatigue (44%), somnolence, felling unwell (33%) and inappetence (25%). During the study there was an increase in depression (20%), pain (20%) and nausea (15%); in the end, the highest symptoms were inappetence (33%), fatigue (56%), somnolence (56%) and depression (15%). For palliative chemotherapy the highest mean was anxiety (41%) subsequently, inappetence (30%), fatigue (34%), depression (11%), pain (7%), nausea (7%), feeling unwell (19%) and somnolence (15%), meanwhile increased shortness of breath (from 7% to 11%). In the final stages, symptoms of anxiety (42%), fatigue (33%), pain (25%) and somnolence (33%) increased and shortness of breath decreased (8%). **Conclusions:** It is observed that the discomfort is related to the characteristics of the treatment, but the moderate/high level of anxiety was a standard at the beginning of the 3 types of treatment. These preliminary results favor early palliative care because they help to understand the moments of greater vulnerability and thus determine when to increase palliative care.

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TEMÁRIO: FARMÁCIA
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INCIDENCE AND CHARACTERIZATION OF IMMEDIATE ADVERSE REACTIONS TO CHEMOTHERAPY INFUSION IN AMBULATORY PATIENTS OF A SENTINEL HOSPITAL

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Introduction: Most antineoplastic agents offer risks regarding the occurrence of adverse reactions to infusion. The incidence and profile of these reactions vary according to the pharmacological characteristics of each medicine, and may or may not be immunomediated. Due to their systemic unspecific action, chemotherapeutics act indiscriminately throughout the body, which can lead to severe adverse reactions. **Objective:** Investigate and characterize the immediate adverse reactions to chemotherapy infusion in ambulatory patients notified in a sentinel hospital. **Method:** This is an exploratory-descriptive study, with a retrospective and prospective approach, carried out between March 2018 and June 2019, approved by the institutional ethics committee under the registry CAAE 06213518.8.0000.5243. A form was developed for this study, in order to best adequate the information obtained from the adverse reaction notification registry, directed to the hospitals risk management department. Further information required for the investigation of adverse reactions was complemented by researching medical records. Reactions to infusion were later classified according to severity, to the Common Terminology Criteria for Adverse Events (CTCAE) and to causality using the Naranjo algorithm. The data was registered in EXCEL 2007 and submitted to descriptive analysis. **Results:** 30 immediate adverse reactions to chemotherapy infusion were registered, involving 28 patients (83% female and 17% male), mainly with Paclitaxel (44%), Carboplatin (20%), Oxaliplatin (14%) e Docetaxel (13%). According to the Naranjo algorithm, 60% of reactions had the chemotherapeutics as probable cause. The average interval between infusion and the beginning of reactions was 40 minutes, with the most precocious manifestation being observed with Docetaxel (5 minutes), and the latest with Oxaliplatin (135 minutes). The severity of reactions varied from mild (60%) and moderate (33%). The most compromised organics segments were the cardiovascular (27%) and respiratory (26%) systems, and 83% of all symptoms were already described in databases. **Conclusion:** Hypersensitivity reactions to Paclitaxel corresponded to the majority of notified events. Despite being mild, these reactions can impact directly on the patients adherence to the treatment, therefore the monitoring of chemotherapy infusion must be uninterrupted.

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TEMÁRIO: ONCO-HEMATOLOGIA
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THE POSSIBLE INFLUENCE OF ANGPTLS INHIBITORY RECEPTORS IN LEUKEMIC BLOOD CELLS AND THE DEVELOPMENT OF GLAUCOMAS

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Introduction: In 40 years, several studies on the development of ophthalmological pathologies, including glaucomas, have been carried out in patients with leukemia. Statistics show that even underdiagnosed and varying from 2 - 3% among older studies, the frequency of open and closed angle glaucoma in leukemic patients in both children and adults is extremely high when compared to the non-leukemic group, reaching 0.0000229% in children. **Aims:** The objective of this article is to relate the known mutations in angiopoietin inhibitory receptors (ANGPTLs). Which recent discoveries related those with the development of glaucoma. In addiction were evaluated possible

relationship between ANGPTL2 with open-angle glaucoma and ANGPTL7 receptors with for closed angle glaucomas, with accelerated development of leukemic glaucoma. **Methods:** PUBMED and EMBASE were used for selecting the reviewed article. Texts related to functionality changes of ANGPTLs in leukemics and in the glaucoma formation were integrated to support this theory. The objective of this study was to evaluate possible association between leukemic in children and premature development glaucomas, favoring the evidence of molecular alterations related to ANGPTLs. **Results:** The high affinity interaction of hyperexpressed LILR2B2 inhibitory receptors found in leukemic blood cells with their ligand ANGPTL2 and the low affinity to Tie2 receptors also found in Schlemm's endothelium may possibly favor the deprivation of this relation pathway, which is responsible for maintaining their opening and its progressive occlusion, forming open-angle glaucoma. ANGPTL7, in parallel, has low affinity for its hyperexpressed LAIR1 receptors. What can may favor the non-adhesion of these proteins to circulating cells, which leads to their accumulation in regions of greater affinity, such as in the trabecular meshwork in the anterior chambers of the eyes, thereby modulating the dysfunction of those and developing closed-angle glaucomas. **Conclusion:** The aim of this review was to evaluate the possibility of a relationship between inhibitory receptors of ANGPTLs in leukemics with their respective ligands ANGPTLs 2 and 7 and the frequent development of glaucomas in this group of patients, in order to offer perspective for future treatments for these secondary pathology decreasing their comorbidities.

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TEMÁRIO: POLÍTICAS PÚBLICAS/ACESSO/FARMACOECONOMIA/ GESTÃO EM SAÚDE
CÓDIGO: 87292

EVALUATION OF THE HEALTH PROMOTION OF WOMEN WITH BREAST CANCER IN PRIMARY HEALTH CARE IN A MUNICIPALITY IN THE SOUTH OF MINAS GERAIS: AN OBSERVATIONAL STUDY

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Introduction: In Brazil, excluding non-melanoma skin tumors, breast cancer (BC) is the most frequent among women, being also a leading cause of death in this population. In order to reduce the morbidity and mortality caused by BC, the Primary Health Care (PHC), which is the structuring axis of the Unified Health System, has as one of their main tools, the health promotion. This tool is defined as a process that allows people to gain greater control over their own health through the broad access to clear, consistent, and culturally appropriate information focusing on the case of BC, especially, on protective factors. **Objective:** Analyzing the occurrence of orientation about the womens health care by PHC to women with breast cancer. **Methods:** It is a quantitative observational study with a cross-sectional design performed with women and coordinates of Family Health Strategy (FHS) in the city of Alfenas, MG, in 2018. The population of women was constituted by those who treated BC in this city of 2011 until 2017. The selected coordinates were those with the highest number of women with BC ascribed in their areas. The "Questionário de Avaliação da Atenção às Mulheres Portadoras de Câncer de Mama" was applied to the women, and the "Questionário Sobre o Controle do Câncer de Mama" was applied to the coordinates of FHS. From both questionnaires were chosen those questions related to health promotion. The data obtained were analyzed descriptively and by Fisher's Exact Test. **Results:** Half of the women attending the FHS reported that there are no actions that stimulate health promotion in relation to the BC. Regarding FHS, except for the orientation to identify alterations in the breast and axilla region, only half of them reported to perform some of the actions to control the development of the BC. In addition, it has been shown, in the view of the woman, that the FHS does not performed lectures and/or programs to encourage breast health care and that the Community Health Agent does not advise them on examinations aimed at women's health. **Conclusion:** Health promotion in what concerns BC in selected FHS needs improvements in the effectiveness of its actions and their expansion.

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TEMÁRIO: POLÍTICAS PÚBLICAS/ACESSO/FARMACOECONOMIA/ GESTÃO EM SAÚDE
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MORTALITY BY BLADDER CANCER IN BRAZIL: WHAT IS THE ROLE OF THE 60-DAY LAW?

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Introduction: Bladder cancer is the most common neoplasm of the urinary tract and the 9th most incident in the world, being more diagnosed between the 6th and 7th decades of life. With heterogeneous characteristics, 70% of the patients presented superficial tumors, and 30% an invasive muscular disease associated with high risk of death due to distant metastasis. Aiming at greater therapeutic success, the 60-Day Law provides for the first treatment of a patient with proven malignant neoplasia and establishes a 60-day period for its initiation by the SUS counted from the day on

which the diagnosis is established in a pathology report. **Objective:** To trace the epidemiological profile of the bladder cancer deaths nationwide between 2010 and 2017 in order to analyze the importance of the 60-day law. **Method:** It consists of a transversal, descriptive and retrospective study based on data from the National Cancer Institute (INCA), using the descriptor câncer de bexiga. The results were discussed through the analysis of articles in the Scielo and Pubmed databases. **Results:** The bladder cancer was responsible for 29,429 deaths, with the national mortality rate been 1.80 per 100,000. As for the regional distribution of cases, the Southeast presented the highest number of records (15,651 deaths), been followed by the South (6,176), Northeast (4,903), Midwest (1,787) and the North (912) regions. According to gender, men involved 20,293 deaths and a mortality rate of 2.94/100,000, while females had 9,133 records and a rate of 0.98/100,000. Finally, it was observed a predominance of deaths among the elderly, contemplating 25,568 notifications (87%). **Conclusion:** It is verified that the bladder cancer has higher rates in the southeast region, male gender and in the elderly population. Smoking is the main risk factor, in addition to other factors such as chronic infection with Schistosoma haematobium and occupational exposure to carcinogens. Given the substantial number of notifications, the 60-day law projects itself as a very important mechanism for early intervention. In this sense, it is estimated that its application guarantees a better prognosis in view of the possible reduction of the occurrence of metastasis and, consequently, drop in mortality rates. For such, improvements in the articulation of services at different levels of complexity are necessary to ensure that all patients have access to the forms of treatment they need in a timely manner.

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TEMÁRIO: POLÍTICAS PÚBLICAS/ACESSO/FARMACOECONOMIA/GESTÃO EM SAÚDE
CÓDIGO: 87277

PREVALENCE AND ASSOCIATED FACTORS WITH PROSTATE EXAMS PERFORMED FOR MEN AGED 45 YEARS-OLD OR MORE IN A SOUTHERN CITY OF BRAZIL

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Introduction: In a controversial context about prostate cancer screening in general population - the Brazilian Health Department does not indicate and others International societies sent your guidelines - the Brazilian Urology Society, through an official note from 2017, recommends starting at 50 years looking for the specialist annually for assessment and discuss risk-benefits and guided those with risk factors (age, afro-descendant, overweight/obese) begin the process at 45 years-old. **Objective:** The study aimed to investigate the prevalence and associated factors with prostate exams performed for men with 45 years-old or older in the city of Rio Grande, RS, Brazil. **Method:** A cross-sectional, population-based survey, was carried out in 2016, with 45 years-old or more individuals from the urban area. The sample was randomly selected and comprised of 281 individuals. The outcome consisted of prostate exam (any moment in the life) considering prostate-specific antigen (PSA) or digital rectal examination or both. Independent variables analyzes were: age in years (45-49, 50-59, 60-69 and ≥ 70), skin color (white or other), civil state (single or other), scholarly in years (0-8, 9-11and ≥ 12), income in tercile (poorest, intermediate, richest), physical practice in leisure-time (yes or no), smoking (yes or no), excess of weight (BMI ≥ 25/m²), health care (yes or no), medical assessment in the last year (yes or no), hypertension (yes or no), diabetes (yes or no), heart disease (yes or no), excessive consumption of alcohol (yes or no), meat consumption (frequency per week). Statistical analyses were performed by Fisher's Exact test (crude analysis) and by Poisson Regression (adjusted analysis). **Results:** The prevalence of prostate exam sometime in life was 68% (95%CI 62 to 74). That prevalence increased with age, schooling level and income (p < 0,001). Also, it was higher among those not single (p < 0,001), non-smoker (p < 0,001), with weight excess (p = 0,001) and who practiced physical activity (p < 0,001). Men who had health care (p < 0,001) or a medical visit in the previous year (p < 0,001) presented a higher probability of had done prostate exams. Other variables (chronic conditions, alcohol or consumption) did not show statistical significance. **Conclusion:** About 3 in every 10 men never performed prostate exam. More attention should be given to poorer individuals, with an unhealthy lifestyle (smoking and physical inactivity) and with less access to health services.

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TEMÁRIO: PULMÃO/TUMORES TORÁCICOS
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PD-L1 EXPRESSION ANALYSIS IN THE SOUTHERN BRAZIL IN THE LAST THREE YEARS

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Introduction: Lung cancer is the leading cause of cancer-related death in the U.S. and worldwide, with nonsmall cell lung cancer (NSCLC) accounting for over 80% of those cases. Programmed death-ligand 1 (PD-L1) expression on tumor cells (TCs) by immunohistochemistry is rapidly gaining importance as

a diagnostic for the selection or stratification of patients with NSCLC most likely to respond to single-agent checkpoint inhibitors. Besides, PD-L1 predicts which patients are more likely to respond to immunotherapy. **Objective:** Epidemiological analysis of patients with non-small cell lung cancer in the Southern of Brazil. **Methods:** Retrospective study with a sample of 889 patients with non-small cell lung cancer who were tested for PD-L1 in the DAKO 22C3 test during July 2017 to May 2019. **Results:** When 889 patients were analyzed, 56.8% were males and 43.2% were female. When analyzing the histological subtype, 74.6% presented adenocarcinoma, whereas 25.4% were squamous carcinoma. The prevalence of high-expression PD-L1 defined as greater than 50% was less than two-fifths of the patient population, with 25.9%. Lower expression, defined by < 1%, was 40,7%. **Conclusions:** The PD-L1 still maintains as the only predictive marker widely used for immunotherapy in advanced lung cancer. As of 2019, it is a mandatory test in any histologic subtype, ideally before any treatment is initiated.

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A THOROUGH EVALUATION OF BIOMARKERS IN BRAZILIAN WOMEN WITH TNBC UNDERGOING NEOADJUVANT CHEMOTHERAPY - TNBCBIOMARKERS

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Rationale: Locally Advanced Triple-Negative Breast Cancers (LATNBCs) are tumors with a high rate of relapse and death, and there is a strong need to explore reliable social and pathological biomarkers. Based on molecular profile, TNBC have been classified into five subtypes with different immunohistochemical profile. **Methods:** This is a single-institutional, retrospective, observational and translational cohort performed through TMAs of women with LACMTN enrolled at INCA between January 2010 and December 2014. PRIMARY **Objectives:** To evaluate the association of the TILs status with complete pathological response (cPR) and PFS. SENCODARY **Objectives:** 1. To determine the prevalence of a large immunohistochemical panel (AR, EGFR, CK5/6, CK14, CK17, CD 117, p53, Ki67 level, PD-L1 and PD-L2 in tumor cell membrane and the pattern of tumor infiltrating mono-lymphocytes PD-1+, FOXP3+, CD 4+ , CD8 +, CD 3+, CD56+, CD68+ and/or CD 14+), before and after chemo 3. To evaluate association between socio-demographic variables with OS, DFS and cPR. **Results:** Herein we present some descriptive sociodemographic data. 236 patients were enrolled, mean age 49.68 (SD ± 11.66), caucasians (47.03%), schooling under 8 years (44.06%), living at a mean distance of 36.12 Km (SD ± 42.9) from the cancer center. Predominantly grade 3 (60.16%), cT3-4 (86.44%), lymph node positive (74.5%), clinical stage III (85.16%). The vast majority (94.04%) of the patients were exposed to anthracycli and taxane-based regimen, mean of 6.97 cycles (SD ± 1.21). As complementary treatment, 10 patients received platinum (mean 3 cycles, SD ± 0.20), 6 were exposed to capecitabine (mean 3 cycles, SD ± 1.60) and 11 patients submitted to radiotherapy. Radical surgery was performed in 230 (97.45%) women and axillary dissection in 205 (86.86%). The mean time to onset of treatment was 62.29 days (SD ± 58.04), mean duration of treatment, 140.2 days (SD ± 38.58) and mean time to end of treatment for surgery, 82.67 days (SD ± 180.06). The CPR rate was 20.76%. Of the 236 patients, 92 (38.98%) relapsed and 85 (36.01%) died to date. **Discussion:** The lower rate of pCR compared to other reports can be explained by the late diagnosis and the prolonged interval between the diagnosis and treatment. Pathological data are still under final analysis, planned to be presented at this conference. We will present unpublished thorough evaluation of TILs and how it impacts on cPR and survival outcomes.

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EVALUATION OF THE PATHOLOGIC COMPLETE RESPONSE IN PATIENTS WITH TRIPLE-NEGATIVE BREAST CANCER IN A PUBLIC HOSPITAL

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Background: Triple-negative breast cancer (TNBC) accounts for about 15% to 20% of breast cancer diagnoses and has an aggressive natural history and poor prognosis. Patients who do not get a pathologic complete response (pCR) after neoadjuvant chemotherapy have a higher risk of relapse. **Objectives:** To evaluate the pCR in patients with TNBC who have undergone treatment at a single public hospital in the south of Brazil. The analysis of disease-free survival (DFS) and overall survival (OS) were the secondary objectives. **Methods:** A retrospective clinical study including patients with non-metastatic TNBC who underwent neoadjuvant chemotherapy between 2012 and 2016. The patients were alocated according to the chemotherapy protocol received: AC-T (doxorubicin 60mg/m2 q3w and cyclophosphamide 600mg/m2 q3w for 4 cycles followed by paclitaxel 80mg/m2 q1w for 12 weeks) and AC-TC (with the addition of carboplatin AUC 2 q1w concurrently with paclitaxel). **Results:** In total thirty-three patients (21 in the AC-T and 12 in the AC-CT group) were included in the study. There was no

significant difference between the groups regarding the clinical staging T and N, subtype histological, grade and Ki-67. The pCR was obtained in 10 patients (47.6%) in the AC-T group and 7 (58.3%) in the AC-CT group, but without significant difference (OR 0.64, 95% CI 0.15 - 2.72; = 0.721). In the univariate analysis there was no significant difference for pRC comparing clinical tumor size (T1-T2 versus T3-T4), clinical lymph node status (N0 versus N1-N2) and histological grade (G1-G2 versus G3). The rate of toxicity grade 3 or above was 75% in the AC-CT group and 19% in the AC-T group (OR 0.08; CI 0.01-0.43; p = 0.0028). The median values of SLD and SG were not reached in this study. **Conclusion:** Data from this retrospective study demonstrated that neoadjuvant chemotherapy with carboplatin in patients with TNBC did not significantly increase pCR rates but led to a significant increase in grade 3 toxicity compared to the non-carboplatin group.

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RETROSPECTIVE ANALYSIS OF INITIAL TREATMENT OUTCOMES IN OLIGODENDROGLIOMAS

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Introduction: The histological classification of Central Nervous System (CNS) tumors has, since 1926, guided clinical decisions in adjuvant treatments. In 2016, molecular testing was integrated to the new WHO classification better correlating to prognosis and clinical outcomes than the prior classification. Clinical trials have established standard adjuvant treatment options over time. These include observation, radiation therapy (RT), and chemotherapy. For high-risk patients, concurrent chemoradiotherapy (CRT) or sequential RT followed by Temozolomide (TMZ) or Procarbzine, Lomustine and Vincristine (PCV) have been used. **Objectives:** Review clinical, epidemiological factors and outcomes related to the initial treatment of oligodendrogliomas in patients from a single Brazilian Oncology Center. **Methods:** Using Recruit we stratified patients with either oligodendroglioma histological diagnosis or molecular 1p/19q codeletion or both, from 1994 until June 2019. Patients with mixed oligoastrocytoma histology and 1p/19q non-codeleted gliomas were excluded. Descriptive analysis of frequencies and central tendency measures were performed. Overall survival (OS) and progression free survival (PFS) were calculated by Kaplan-Meier analysis. **Results:** Of 51 patients reviewed, 52,9% were female and seizure was the initial symptom in 53,7%. These tumors were diagnosed by Magnetic Resonance Imaging (MRI) in 82,4% of patients and the majority of them were localized in the frontal lobe. Grade 3 tumors were related to an increased risk of progression, when compared to Grade 2, with a median PFS: 17.2 x 81.4 months, respectively (HR PFS 3.39; p = 0.01). Partial resection was associated to an increased risk of death when compared to Subtotal and Gross-total resection (HR OS 12.3; p = 0.03). Adjuvant treatment were as follows: observation in 36,7%, RT in 14,3%, TMZ in 10,2%, sequential TMZ following RT in 24,5% and CRT in 14,3%. TMZ was the main chemotherapy regimen, except for 2 patients. In Grade 2 tumors, the 11 patients who received TMZ were progression free at the time of last follow-up. The main related adverse event was Grade 1-2 nausea (70%). Grade 3 anemia occurred in one patient who required blood transfusion. **Conclusion:** Besides having a small number of cases, our survival data are similar to that revised in literature and our study suggests that TMZ has similar impact on survival to PCV, considered actual standard adjuvant chemotherapy.

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TEMÁRIO: TUMORES NEUROENDÓCRINOS
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CLINICAL CHARACTERISTICS AND SURVIVAL IN PATIENTS WITH HIGH-GRADE GASTROENTEROPANCREATIC NEUROENDOCRINE NEOPLASMS

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Introduction: High-grade gastroenteropancreatic neuroendocrine neoplasms(GEPNENs) are defined as neoplasms having a high proliferative index with a Ki-67> 20%. They are a highly heterogeneous group, containing tumors that are both well and poorly differentiated. Data on GEP-NENs are limited. We retrospectively studied clinical data GEP-NENs patients.

Objective: To characterize patients attended at Federal University Hospital (UNIFESP) between 2000 and 2019. **Methods:** We retrospectively studied patients with GEP NENs, and divided them into WD-NETs (Ki67≤55%) and PD-NECs (Ki67>55%) according to histological reports. The relationship between baseline characteristics and overall survival(OS) was analysed using the Kaplan Meier logrank test. RESULTS 23 patients were analyzed (14 PD-NEC, 9 WD-NET) with a median follow- up of 18 months. Tumor origin included pancreas (34%) and gastric (26%). The primary tumor was resected in 10 patients. Metastatic disease was evident at diagnosis in 60% (liver metastases: 64%). Median Ki-67 index was 80% (35% in WD-NET and 80% in PD-NECs). Chemotherapy was administered in 12 patients. Platinum-etoposide was the first choice in most of patients(58%). There was a trend in improved survival in the WDNET cohort compared to PD-NECs. Of the entire cohort, an independent effect of Ki67 was demonstrated on risk of mortality (the hazard ratio for death: 8,3; 95% CI, 2-46.3; p:0.004). Ki67>55% was associated with poorer OS compared to lower Ki67 index (median OS 2.4 mo vs 21.2 mo; $p < 0.001$). Second- line therapy (mainly Platinum- irinotecan) were given in 5 of WD-NET and 1 of PD-NECs patients. Median PFS and OS were 2.5 and 2.7 months respectively after second-line. **Conclusions:** GEP- NEN patients have a poor prognosis. Ki67>55% was the most negative prognostic factor for survival. Additional clinical and molecular tumor data are needed to individualize future treatment of these patient

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A RETROSPECTIVE STUDY OF AGEING PATIENTS WITH GASTROINTESTINAL CANCER TREATED BETWEEN 2014-2018

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Introduction: Data from GLOBOCAN estimate more than 6 million of cancer patients older ≥ to 70 years. As the elderly population is poorly represented in clinical studies, it becomes important to know how these patients are treated. **Objective:** To evaluate the treatment of patients ≥ 70 years with Gastrointestinal Cancer (GIC) in a University public hospital. **Method:** We retrospectively included patients treated between 2014-18, with diagnosis of GIC aged ≥ 70 years by electronic medical record . Tumor localization, stage, histological type and treatment including chemotherapy (CT) were studied.**Results:** We included 71 patients (mean age of 79 years). Adenocarcinoma was the most frequent histological type (31 had colorectal cancer, 18 gastric, 7 pancreas, 4 duodenal papilla and 1 esophagus), 4 had GIST, 3 squamous cell carcinoma of the esophagus and 3 of the anal cancer. Colon: 4 stage IV were treated with CT with fluoropyrimidine and oxaliplatin (3 received 7 and one 14 cycles of XELOX with subsequent treatment change due to disease progression -DP). Stage I-III tumors were submitted to surgery and adjuvant CT indicated in 8 of 9 patients. XELOX was initiated in 3, with posterior withdrawal of oxaliplatin by toxicity and in the others only fluoropyrimidines was prescribed. Rectum: 1 stage IV treated with FLOX, 10 did neoadjuvant chemoradiotherapy (CRT) with posterior surgery, 6 went neoadjuvant CRT without surgery by DP/PS (performance status), 9 did adjuvant CT with capecitabine (2 cycles). Gastric: 5 were stage IV, 4 received CT with FLOX, EOX and Taxol (4 cycles) and 1 receive BSC;9 were submitted to surgery, and in 6 adjuvant CT with XELOX, FOLFOX or CRT was indicated, only 1 completed all the treatment. Esophagus: 2 were treated with CRT, 1 receive CT and had DP during the treatment and 1 receive BSC by poor PS. Duodenal papilla: 2 received adjuvant gemcitabine (5 cycles), 1 palliative CT with FLOX and 1 only BSC. Pancreas: 2 had surgical resection (both PD after, not performing adjuvant), 5 were unresectable (1 BSC and 4 treated with mean of 7 cycles of gemcitabine until DP/poor PS). GIST: 1 unfavorable outcome in one whose histology was high grade, 3 treating with Imatinib. Anal cancer: 1 treated with CRT, 1 stage IV treated with capecitabine, and one BSC. **Conclusion:** 16 had metastatic disease at diagnosis and 5 received only BSC. The analysis of this subgroup of patients is necessary to elaboration of hypotheses regarding the tolerability of CT.

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EPIDEMIOLOGIC EVALUATION OF PATIENTS WITH STAGE II COLORECTAL CANCER: A RETROSPECTIVE ANALYSIS

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Introduction: The role of adjuvant chemotherapy (ACT) after curative resection of colorectal cancer (CRC) is eradication of micrometastatic disease, decreasing the recurrence and improving the overall survival, but

for patients with stage II CRC is an area of controversy in oncology. Current guidelines recommend ACT forpatients with high-riskfactors. However, chemotherapy may have risk of side effects, and decrease the quality of life. The decision of ACT should be made under considering the balance between the risk of recurrence and chemotherapy. **Objective:** This study aimed to determinethe epidemiological characteristics ofstage II CRC in a Hospital reference in cancer treatment to explore the clinical and pathologic featuresand compare with possible outcomes. **Methods:** This is an observational, unicenter and retrospective study, of all patients with diagnosis of stage IICRC treated at Erasto Gaertner who performed curative surgery between 2011 and 2017. The patients were compared by clinical and pathologic features. Retrospective analyses were made using data collected from medical records. Partial **Results:** 185 patients were evaluated. The average age was 61 years (31-88). In total, 95 were women (52%). Among patients, frequent locations were rectosigmoid and sigmoid, but a consider number were localized on right colon (37%). After surgery, 111 patients received adjuvant chemotherapy (60%) and in 74, chemotherapy was omitted (40%).For the group that ACT was performed, median time-to start adjuvant chemotherapy was up to 8 weeks in most of patients (60%), in 92% the chosen chemotherapy was 5FU/LV and 71,9% of the patients have experienced toxicity. 27 patients (14%) had relapse; relapses were local in 16 patients (8.6%) and distant in 11 patients (5.9%). Mismatch repair protein immunohistochemistry (MMR-IHQ) was performed in only 53 samples, which 13 were considered unstable. **Conclusions:** Approximately ¾ of patients who performed ACT haveexperienced toxicity in different grades. Within the clinical and pathologic features evaluated, a considerable number of patients didnt have a suitable lymph node sampling and no evaluation for MMR. These are high rates for current practice. The number of relapses were slightly higher in the groupin which ACT was performed. The final results are ongoing.

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EPIDEMIOLOGICAL PROFILE OF PATIENTS WITH ESOPHAGEAL CANCER TREATED AT THE ONCOLOGY OUTPATIENT CLINIC IN THE PUBLIC HEALTH SYSTEM OF THE SÃO LUCAS HOSPITAL OF THE PONTIFICAL CATHOLIC UNIVERSITY OF RIO GRANDE DO SUL (HSL-PUCRS)

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Introduction: Esophageal cancer is the fifth cause of death due to malignant neoplasm in men in Brazil. Late diagnosis is a poor prognostic factor and the difficulty of access to specialist consultation contributes to the therapeutic delay, worsening of the patient´s clinical condition and can result in a lower overall survival. GOAL To describe the epidemiological profile of esophageal cancer patients treated at HSL-PUCRS Brazilian public health system and evaluate clinical, radiological and laboratory changes that can be identified as prognostic factors for overall survival. **Method:** A retrospective observational study that collected data from medical records of all patients seen at the Oncology Outpatient Clinic of the HSL-PUCRS with diagnosis of esophageal malignancy in the period from 2012 to 2019. The Neutrophils/Lymphocytes ratio and sarcopenia (on chest tomography) will be correlated with overall survival. RESULTS One hundred eight patients with esophageal cancer were identified within 7 years. The mean follow-up was 382 days, and 14 patients (12.9%) only had one visit and did not start treatment. The mean time between the diagnosis and the first consultation with Oncologist was 80 days. In the initial evaluation 65 patients had performance status (PS) ECOG 0 or 1 and 43 PS ECOG ≥ 2. The clinical stage of the disease was II and III in 56.4%, stage IV 27.8% and 17 patients (15.7%) were not staged. The mean survival was 13.8 months (m), being 7.1m in stage IV, 12.1m in stage III and 25.6m in the EC II. Of the 61 patients with stage II and III, 39 underwent concomitant chemotherapy and radiotherapy (58.9% neoadjuvant). Five patients discontinued treatment for toxicity (including 2 per death) and 11 patients for lack of compliance. In the 23 neoadjuvant treatments, 4 patients were not submitted to surgery due to clinical worsening and nine (47.3%) achieved complete pathological response. The remaining 22 patients with locally advanced disease underwent isolated radiotherapy or exclusive palliative care. Overall Survival will be correlated with complete pathologic response, sarcopenia, and lymphocyte/lymphocyte ratio. **Conclusion:** This study is an overview of the profile of patients diagnosed with esophageal cancer treated in a Brazilian public health service. Epidemiological data demonstrate a predominance of advanced stage and most patients did not undergo ideal treatment due to unfavorable status performance and/or poor adherence to treatment.

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ESOPHAGEAL CANCER AND THE IMPORTANCEOFTHEMULTIDISCIPLINARY APPROACH: AN IMAGE OF THE SITUATION IN BRAZIL IN THE LAST 11 YEARS

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Introduction: Esophageal cancer is one of the most frequent and lethal malignant neoplasms in the world, being the third cause of death by digestive cancer. The histological type of the disease is related to its etiology, being squamous cell carcinoma responsible for 96% of the cases and related to smoking and alcoholism, and adenocarcinoma associated with the Barrett's esophagus. In Brazil, the disease most frequently affects elderly and males and shows a considerable morbidity and mortality rate. **Objective:** Describe the cases of esophageal cancer in Brazil and its relation with the multidisciplinary approach. **Methods:** This is a descriptive study with a quantitative approach. The data were extracted from DATASUS, using the descriptor "malignant esophageal neoplasm", from 2008 to 2018, the cases registered in Brazil. The results were discussed based on the reading of the articles from the Lilacs and Scielo databases. **Results:** 177,796 cases of hospitalization for esophageal cancer were reported. From the total, 77% were male and 42% declared themselves to be white. In terms of region, the Southeast registred 51% of the cases. Regarding the age, the "50-59 years" had the highest rates (30%). About the hospitalized patients, 16% died, 78% were men and 40% were white, predominating in the age group "60 to 69 years" (30%) and in the Southeast (52%). **Conclusion:** It is observed that esophageal cancer shows higher rates at more advanced ages and in men, result of factors, mainly, behavioral. In addition, the incidence varies with ethnicity and region, due to socioeconomic agents and access to diagnosis. Thus, the assistance of a multidisciplinary team is essential to the success of treatment, which depends on prevention, effective nutritional support, psycho-emotional support, social assistance and shelter. Therefore, the professional integrality allows the rehabilitation of the individual, giving support to their social reinsertion.

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GASTRIC CANCER IN BRAZIL: AN ANALYSIS OF MORTALITY RATES AND THE IMPORTANCE OF THE MULTIDISCIPLINARY APPROACH

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Introduction: Gastric tumors have an initially silent clinical picture or nonspecific manifestations, repercuting on a late diagnosis, the main reason for the poor prognosis of this condition. Among the gastric expansive lesions, the adenocarcinoma corresponds to 90% of the cancers that involve the organ, with peak in incidence at 60 years old. Regardless of the histological type, the neoplasm infiltrates the gastric wall and, as it deepens, increases the likelihood of metastasis and reduces the 5-year survival rate. **Objective:** To delineate the epidemiological profile of deaths by gastric cancer nationwide between 2010 and 2017 to evaluate the importance of multidisciplinary management of cancer patients. **Method:** This is a cross-sectional, descriptive and retrospective study based on data from the National Cancer Institute (INCA), using the descriptor "câncer de estômago". The results were discussed through the analysis of articles in the Scielo and Pubmed databases. **Results:** The gastric cancer was responseble for 111,881 deaths, with the national mortality rate (6.80 per 100,000) being higher than worldwide (6.28/100,000). Despite this, there was a reduction from 7.02 to 6.57 / 100 thousand between the first and last year analyzed. As for the regional distribution of notifications, the Southeast presented the highest number of records (52,491 deaths), followed by the Northeast (25,141), the South (19,305), the North (8,428) and the Midwest (6,516) regions. According to sex, men were involved in 71,886 deaths with a mortality rate of 9.86/100,000, while females comprised 39,989 records and a rate of 4.39/100,000. Finally, there was a predominance of reports from 50 years old, with 98,514 fatal cases (88%). **Conclusion:** The mortality rate of stomach cancer is highest in developing countries, increasing with age and in males. Factors such as greater population aging, smoking and alcohol consumption explain this predominance, occurring even more in the Southeast region due to dietary habits and environmental factors. In the treatment, a multidisciplinary approach is more effective than a succession of isolated interventions in the management of the patient. In addition to improving the prognosis of the disease, it allows a global look and favors the narrowing of the patient-professional bond.

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INVESTIGATION OF POLYMORPHISMS IN GENES XRCC1 AND XRCC3 FOR SUSCEPTIBILITY TO GASTRIC CANCER IN THE NORTHERN REGION OF BRAZIL

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Introduction: Gastric cancer is one of the leading causes of cancer death in the world due to its prevalence and bad prognosis. DNA repair system genes are candidates for cancer susceptibility. XRCC (X-ray repair cross-complementing) genes are family members of the DNA repair system, which are polymorphic with several non-synonymous polymorphisms. Several evidences have shown that more than one hundred proteins decoded by the XRCC genes are implicated in four DNA repair pathways, which function as tumor suppressor genes or oncogenes participating in carcinogenesis by regulating post-expression of homologous target genes. Polymorphisms in these genes can help clarify gastric tumor progression. Objectives Investigate genetic polymorphisms in XRCC1 (rs1799782) and XRCC3 (rs861539) genes and its possible association with the susceptibility to gastric cancer in patients of a population of the Northern region of Brazil. Methodology Were included 95 individuals with gastric adenocarcinoma in the case group and 94 cancer-free individuals in the control group. The QuantStudio 12K Flex Real-Time PCR System (Applied Biosystems®, USA) was used to genotyping the two polymorphisms. The statistical analyses were carried out using statistical program SPSS v. 20.0 (SPSS, Chicago, IL, USA). Results No significant results were found about association between XRCC1 (rs1799782) polymorphism and gastric cancer. However, , the polymorphisms of the XRCC3 gene (rs861539) demonstrate an association of susceptibility to gastric cancer. Individuals with the mutant allele T presented eighteen(18x) more risk to develop gastric cancer in comparison to individual that are CC homozygous (*p* -value = 3.81E-7; OR = 18.873, IC 95% = 6.073-58.651). Conclusion The study suggests that the rs861539 polymorphism of the XRCC3 gene may be related to gastric cancer susceptibility in individuals in Northern Brazil.

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EPIDEMIOLOGIC STUDY ON PENILE CANCER IN RIO GRANDE DO NORTE - BRAZIL

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Introduction: Penile cancer is an aggressive and rare disease, with incidence less than 1% of male malignancies in the US and Europe. However, the incidence reaches 10% in developing countries such as Africa and South America. In Brazil, penile cancer stands for 2% of the tumor types, one of the worlds highest incidence rates for this neoplasia, especially in regions of the North and Northeast. There are several causes related to the development of penile cancer, such as socioeconomic level and precarious conditions of personal hygiene and HPV infections. Due to the rarity, there are few clinical data in the literature on this type of cancer. **Objectives:** The objective is to trace the clinical-epidemiological profile of penile cancer in Rio Grande do Norte and correlate it with Brazilian data and world literature. As well as evaluating prognostic factors and overall survival. **Methodology:** This is an epidemiologic study based on the analysis of 94 medical records of patients with a histopathological diagnosis of penile neoplasia treated in an institute of reference in Rio Grande do Norte between 2011 and 2018. Results and **Discussion:** According to the analysis, 72.2% of the patients are from country side versus 27.8% are from the capital; 81.4% were 50 years of age or older. The majority of cases occurred between 50 and 70 years, increasing the incidence by age; 66.7% were brown and 84.1% were illiterate or had incomplete elementary education. The majority of patients were diagnosed in the early stage of disease, in stages: I (21.3%), IIA (27.7%) and IIB (19.1%). In 20.2% of cases, the neoplasia was diagnosed in stage IV, leading to decreased survival and higher mortality rates. Almost half of the patients (47.9%) were submitted to partial penectomy and 20.8% to partial penectomy with inguinal lymphadenectomy. About 10% of the patients received treatment with adjuvant or palliative radiotherapy or chemotherapy. Furthermore, 8.6% of patients progressed with distant metastasis, mainly for lymph nodes (87.5%), lungs and bones (12.5%). The median follow-up was 18 months, with overall 5-year survival of 59.1%. **Conclusion:** Penile cancer is a very frequent pathology in Brazil, the worst prognosis is related to a delay in obtaining specialized medical assistance. This study aims to contribute to the construction of an epidemiological map of penile cancer in state of Rio Grande do Norte and Brazil, population awareness with prevention, early diagnosis and treatment.

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TEMÁRIO: TUMORES UROLÓGICOS PRÓSTATA
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RADIUM-223 IN METASTATIC PROSTATE CANCER: CLINICAL EXPERIENCE OF A BRAZILIAN INSTITUTION AND ITS COMPARISON TO PIVOTAL STUDY

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Background: In castration-resistant prostate cancer (CRPC), the skeleton is the most common metastatic site, decreasing patients quality of life and survival. Radium-223 is an alpha particles emitter which are selectively accumulated in the bone, producing a palliative anti-tumor effect on these metastases, improving overall survival and the time to first symptomatic skeletal event in these patients. Our main objective is to compare our experience with radium-223 with ALSYMPCA trial data. Patients and **Methods:** This retrospective study describes the experience with radium-233 in patients with mCRPC and no known visceral involvement at an oncology reference hospital in São Paulo, Brazil. Were enrolled all the patients who received radium-223 between January 2017 and July 2019. **Results:** This study involved 45 patients, of whom 33 were selected. The main age of prostate cancer diagnostic was 64 years. The most common prognostic stages were III (18%) and IV (42%). All patients had used androgen deprivation therapy (ADT), 63% chemotherapy and 60% was submitted to bone metastases radiotherapy before radium-223. Most of the patients (57%) received 6 cycles of radium-223, like ALSYMPCA study (63%), and the main cause of discontinuation before it was bone disease progression (43%). Bone pain control was achieved in 72% and 36% needed bone metastases radiotherapy after radium-223. Twenty one percent progressed bone disease during radium-223. Other 18% progressed after the treatment, in which the median time to first skeletal symptomatic event was 6 months, less than in pivotal trial (15,6 months). Thirty percent did not progress bone disease and 27% died during the treatment or less than 30 days after the cycles, none of them related to Radium-223. A 30% or more reduction in prostate-specific antigen (PSA) and alkaline phosphatase (AP) blood levels after 12 weeks of Radium-223 was achieved in 10% and 15%, respectively, less than in reference study (16 and 37%, respectively). The main adverse events were anemia (70%; 9% grade 3), fatigue (51%) and diarrhea (39%), more than in ALSYMPCA trial (31%, 26% and 25%, respectively). In both, 36% had nausea. **Conclusion:** Radium-223 showed a clinical benefit, reducing bone metastases pain, and was well tolerated in patients with mCRPC. We observed less median time to first skeletal symptomatic event, more adverse events and less time to increased PSA and AP, in comparison to ALSYMPCA trial.

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FUNCTIONAL CAPACITY AND LEVELS OF PHYSICAL ACTIVITY AS RISK FACTORS FOR HOSPITALIZATION IN OLDER CANCER PATIENTS: PROSPECTIVE COHORT WITH 747 PATIENTS

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Background: With the aging of the population, cancer in the elderly is becoming an increasingly common and complex health problem, particularly in low-middle-income countries. In these settings, the comprehensive geriatric evaluation (CGA), although recommended, is still challenging. Certain components of CGA associated with the risk of early hospitalization in older cancer patients. Hospitalization is a serious adverse event in the older and can contribute by itself to increased vulnerability and death independently. **Objective:** To determine the functional factors of exercise for early hospitalization (up to 180 days) in elderly cancer patients. **Method:** prospective cohort study approved by the institutions ethics committee. Participants with a recent diagnosis of cancer were from eight community hospitals and one cancer center in Northeast Brazil and were recruited during their first medical appointment at the outpatient oncologic clinic. A basal CGA was done before the treatment decision (ADL, Charlson Comorbidity Index- CCI, Karnofsky Performance status KPS, GDS15, IPAQ, MMSE, MNA, MNA-SF, PS, PPS, Polipharmacy, QLQc30, TUG). During the follow up of six months, information about the treatments performed, the targeted interventions and early hospitalization was collected. Overall survival was estimated using the Kaplan Meier method, and survival curves were compared using the Log rank test for categorical variables. A multivariate Cox proportional hazards model was used to select early death risk factors. **Results:** From 2015-2017, 747 patients, mean age 71,27 ± 7,40 SD (range 60-96) 51,8% males were enrolled. The prevalence of early hospitalization was 34.7%. Risk of hospitalization up to 6 months (multivariate Cox regression model) wasBeing female increased the risk of hospitalization by 28% (HR 1.28, CI 1.01-1.65 p = 0.050), diagnosed metastasis at 94%(HR 1.94, CI 1.51-2.51, p < 0.001), and abnormal moderate to severe abnormal mobility by TUG 61% (HR 1.61 CI 1.51-2.51, p < 0.001) age-controlled at diagnosis and primary tumor site. **Conclusion:** The prevalence of risk of early hospitalization to older cancer patients is relevant and associated with gender, metastatic disease at diagnosis and Timed Up and Go Test (TUG): mobility.

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UNEXPECTED RESULTS FROM MULTIGENE PANELS IN HEREDITARY CANCER SYNDROME AT A LATIN-AMERICAN CANCER CENTER

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Introduction: Approximately 10% of cancers can be attributed to a germline mutation, confirming an inherited cancer syndrome. Hereditary Cancer Syndrome (HCS) has significant implications in early screening and prevention for the proband and at-risk family members and also is critical for modern oncologic care. Multigene panels have been increasingly used by experts and shown to be a cost-effective approach to diagnose HCS in genetic counseling practice, with the advent of Next-Generation Sequencing (NGS). One relevant role of multigene panels versus syndrome-specific germline testing is for patients with clinical histories spanning several possible diagnoses and for patients with suspicious clinical histories not meeting diagnostic criteria for a specific HCS. However, more multigene panels are performed, more incidental findings are revealed in genes whose clinical implications are not fully understood. **Purpose:** our aim was estimate the rate of unexpected results in multigene test for HCS in patients followed in Oncogenetics Department at A.C. Camargo Cancer Center (ACCCC) **Patients and Methods:** Retrospective cross-sectional study. Data from patients seen at the Oncogenetics Department of ACCCC who carried out multigene panels to investigate hereditary cancer syndrome, from January 2014 to July 2018. Unexpected result was defined when the affected gene was not considered for the initial diagnostic criteria. **Results:** A total of 535 patients performed multigene panels based on genetic counseling, 492 females and 44 males with an average age of 48 years. Panels of 5-79 genes were performed in fifteen different laboratories. Of these, in 136 (25.4%) were found a pathogenic variant, and in 187 (34.9%) was found at least one variant of uncertain significance (VUS). Among the positive results, 15.4% (21 out of 136) were considered as unexpected **Results:** TP53 (6), monoallelic MUTYH (5), NBN (1), BRIP (1), BARD1(1), DIS3L2 (1), SPINK1 (1), MLH3 (1), MSH6 (1), NF1 (1), CHEK2 (1) and SBDS (1) genes. **Conclusions:** our data point to a moderate-to-high rate of unexpected results in multigene panels for HCS and reinforce the challenge of careful interpretation these unexpected findings in the Genetic Counseling, including actionable genes and genes that can not change the medical management.

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COMPARISON BETWEEN DRUG COSTS FOR THE SYSTEMIC TREATMENT OF METASTIC LUNG CANCER, OVERALL SURVIVAL GAIN AND ECONOMIC GROWTH IN BRAZIL

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Background: systemic treatment for patients with metastic lung cancer is considered a major advancement in the field of oncology. Although undeniable progress has been made in the treatment of such patients, affordability of the more recently implemented treatments, for people in the less developed parts of the world has been questioned. **Aim:** to expose the disparity between cancer drugs costs, survival gain and economic growth in a developing country (Brazil), using first line therapy to metastic lung cancer (non-squamous only without driver mutations) as an example. **Methods:** first we analyzed the costs of all included first-line systemic therapy regimens from NCCN guidelines for metastic lung cancer (non-squamous and no driver mutation identified) over the last two decades, dividing the therapy in five broad categories, each one corresponding to a generation of treatment. The following regimens were considered: single-agent chemoterapy, Firstgeneration platinum doublet, second-generation platinum doublet, third-generation platinum doublet and immunotherapy. After that, we identified in the pivotal studies, how much median overall survival cummulative gain was obtained in each generation of treatment in comparison to the last one. Then we compiled the data and compared, in graphics, with economic metrics observed for Brazil during the same period, suchs as nominal gross domestic product (GDP) growth, GDP per capita and inflation. **Results:** it was observed that the current choice of first line therapy for metastic non-squamous lung cancer, without driver mutation: cisplatin + pemetrexed or immunotherapy (for patients with high PD-L1 expression), now costs more than 130 to 200 times the price of single-agent cisplatin. Median overall survival has been increased from 4-6 months to around 10-12 months (all patients considered) or 30 months (for patients with high PD-L1 expression), with small incremental gains for each generation of treatment. In comparison, brazilian GDP had an increase of 85% during the same time span, while GDP per capita increased 45%. **Conclusion:** the exponential rising in the price of the drugs surpassed much of the economic growth of Brazil in the last two decades. Although the observed median overall survival has been steadily increasing during the same time span, reaching now an impressive mark of 30.2 months (for patients with a high level of PD-L1 expression), it is not in the same pace as the cost of the drugs.

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POST-GENETIC TEST RESULT ANXIETY AND DEPRESSION IN ONCOLOGIC PATIENTS SUSPECTED FOR HEREDITARY BREAST AND OVARY CANCER (HBOC) OR LYNCH SYNDROME (LS)

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The diagnosis and treatment of cancer can represent changes and impacts, resulting in different emotional reactions. Approximately 10% of the cancers may be hereditary, and through genetic testing it is possible to identify carriers of mutations which increase the risk of developing neoplasia. The knowledge about genetic mutation into a family may contribute to greater vulnerability to anxiogenic and depressive symptoms, as well as distress, guilt and fear. This work aims to evaluate the association between anxiety and depression levels in suspected HBOC or LS patients submitted to genetic tests and associate them with clinical, sociodemographic and psychiatric history. A cross-sectional, quantitative study has been accomplished, in which a total of 71 patients tested for HBOC and LS syndrome have been assessed for anxiety and depression levels after receiving the genetic test result. The Hospital Anxiety and Depression Scale (HADS) (Zigmond and Snaith, 1983) validated in Portuguese (Botega et al., 1995) has been used immediately after the subjects received the genetic results. The collected information has been analyzed according to sociodemographic variables, exposure to cancer risk factors and psychiatric and family history of cancer using X2 or Fishers exact tests ($p < 0.05$,SPSS20.0 for Windows). For HBOC, 48.3% (29/60) of the patients presented a pathogenic mutation in BRCA1/2 and for LS, 72.7% (8/11) of the patients presented pathogenic mutations in MLH1/MSH2/MSH6/PMS2. The average levels of anxiety and depression for HBOC were 5.97 ± 3.67 and 4.93 ± 3.61, and 5.00 ± 3.77 and 5.18 ± 3.79 for LS, respectively. A direct association between moderate anxiety levels (> 6) and personal history of psychiatric illness ($p = 0.045$) has been observed in patients with suspected HBOC and moderate depression levels (> 6) and personal history of psychiatric illness ($p = 0.049$) in patients with suspected LS. The positive result of a pathogenic mutation has not been associated with the modification of anxiety or depression levels in patients with HBOC or LS. The results demonstrate that

patients with a previous psychiatric history are more prone to present symptoms of anxiety and depression. An approach of psychosocial aspects as well as psychological support must be used to prevent and minimize possible emotional impacts after the genetic test result. **Acknowledgments:** Programa Nacional de Apoio à Atenção Oncológica (PRONON) of the Ministry of Health for the financial support.

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GENOMIC LANDSCAPE OF BRAZILIAN NON-SMALL CELL LUNG CANCER

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Background: Non-Small Cell Lung Cancer (NSCLC) NSCLC patients may be benefited by tailored treatment based on genomic profiling. However, the genomic landscape of Brazilian NSCLC remains unknown. **Aim:** to evaluate the genomic profiling of Brazilian NSCLC. **Methods:** We analyzed 96 NSCLC patients from Barretos Cancer Hospital, Brazil. Exome sequencing from paired tumor/blood DNA was performed by Illumina HiSeq2500; VarScan was applied for germline alterations exclusion, variant calling and annotation. Cancer Genome Interpreter was employed for identification of driver genes, Somatic Signature for Mutational Signatures and Circular Binary Segmentation for Copy Number Variations (CNV). Gene expression profiling (GEP) was assessed by NanoString and pathway enrichment by KEGG. **Results:** Overall, 61 cases were adenocarcinomas, 34 squamous cell carcinomas and 1 was adenosquamous (I,n = 19; II,n = 14; III,n = 23; IV,n = 40); 82 patients were current/former smokers and most of them presented the mutational signature 4 (never smokers, n = 12). More than 30,000 mutations were detected and 733 were classified as drivers (known:90; predicted:643). TP53 gene was the most recurrently mutated gene (56%). Besides of TP53 gene, recurrent mutations were found in KRAS (23%), EGFR (12.5%), NFE2L2 (9%), HERC2 (9%), STK11, ROS1, PIK3CA and CDKN2A (8%). KRAS, EGFR, STK11 and ROS1 mutations were mutually exclusive. CNV gain was observed in 1q21.3, 1q22, 3q26, 31q29, 7q11.21, 7p11.1-q11.1, 8p11.1-q11.1, 19q13. Downregulation of DKK1, IBSP, LAMC2, NGFR and LAMB3 and upregulation of LAMC3, MAPK8IP1, IL5RA, NR4A1, AXIN2, PLA2G4E, COL6A6, LRP2, NR4A3, FOS, and FGFR2 were observed in early disease stages indicating enrichment of PI3K-Akt, MAPK, Ras, Rap1 and Wnt signaling pathways. Downregulation of MCM2, VEGFA, E2F1, HMGA1, CCNE1, CHEK1, RAD51, FOSL1, CCNB1, IL11 and IL8 and upregulation of WNT10B, MAPK10, WNT4, IL7R, PIK3CG, and FGFR2 were observed in never smokers indicating Cell cycle, Pathways in cancer and PI3K-Akt signaling enrichment. GEP of KRAS-mutated tumors mostly indicated ECM-receptor interaction enrichment and TP53-mutated tumors indicated cell cycle enrichment. **Conclusions:** The genomic profiling of Brazilian NSCLC indicated remarkable driver mutations and amplifications. GEP indicates the enrichment of key pathways enrolled in TP53- and KRAS-driven tumors. Our results may contribute for the knowledge of molecular pathogenesis of Brazilian NSCLC.

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MOLECULAR PROFILING IN PATIENTS WITH NON-SMALL-CELL LUNG CANCER: POPULATION ANALYSIS OF A BRAZILIAN CANCER CENTER

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Introduction: Molecular profiling of advanced non-small cell lung cancers (NSCLC) is essential in the selection of the candidate population to targeted therapy (TT). TT has greater efficacy, with better response rates, survival and tolerance in comparison to standard therapies such as chemotherapy. **Objectives:** To determine the mutational profile in NSCLC of a population in a Brazilian Cancer Center and to compare results with international cohorts in order to determine differences in mutation frequency. **Methods:** A retrospective single-institution cohort of 1133 patients (pts) diagnosed NSCLC, from May 2015 to May 2019, screened for EGFR, KRAS and BRAF mutations and also ALK and ROS-1 rearrangements. Additionally to genomic findings, PD-L1 expression was also determined. Not all pts underwent identical molecular profiling. **Results:** Median age was 65.3 years. Adenocarcinoma was the most common histology (89.3%) followed by squamous cell carcinoma (6%). KRAS was the most common mutation (144/514 pts - 28%) with G12C and G12D the 2 most frequent mutations (74.8% and 18%, respectively). EGFR mutations were reported in 22.3%

of cases (141/632 pts); of the EGFR mutated pts, 86.5% had sensitivity mutations, with del19 (45.3%) and L858R (36.8%) the most common mutations. Complex EGFR mutations were observed in 4 pts. ALK and ROS-1 rearrangements frequency was 7.3% (67/915 pts) and 2.2% (4/181 pts), respectively. BRAF was found altered in 3.5% (18/508 pts); V600E was the most common BRAF mutation (66%). Regarding PD-L1, expression was lower than expected. Mean expression was 15.8% and median and mode were 0%. Only 47.44% of patients (130/274) had a positive (≥ 1%) PD-L1, with only 16% pts with a PD-L1 ≥ 50%. **Conclusion:** This cohort shows incidence of EGFR and ROS-1 alterations similar to international studies. ALK was more common than in international series. PD-L1 expression was much lower in the Brazilian population than shown in previously reported trials. The difference between mutational profile in Brazil and elsewhere remains to be properly clarified, what is specially important with the advancement of target therapy.

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EPIDEMIOLOGY OF CENTRAL NERVOUS SYSTEM METASTASES IN PATIENTS WITH LUNG ADENOCARCINOMA HARBORING ONCOGENIC DRIVER ALTERATIONS

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Introduction: Lung cancer is the leading cause of cancer-related mortality worldwide. Numerous oncogenic driver alterations associated with non-small cell lung cancer (NSCLC) have been described lately. A breadth of targeted therapies has changed the treatment paradigm for NSCLC. Despite these advances, NSCLC remains a lethal disease, with central nervous system metastases (CNSm) being one of the main causes of death. Data regarding the frequency of molecular alterations, clinical characteristics, and treatment sequencing in patients with NSCLC and CNSm harboring actionable targets are scarce in the Brazilian population. **Objective:** To describe molecular profiling, clinical and epidemiological characteristics of lung adenocarcinoma (LA) patients harboring oncogenic driver alterations, diagnosed with CNSm during their clinical history. **Methods:** Retrospective study of data extracted from patient electronic records from a single institution. Patients with LA and oncogenic driver alterations were selected. Those with evidence of CNSm were included for analysis. Clinical and molecular characteristics were described. **Results:** We identified 313 patients with LA and driver genetic alterations. CNSm were detected in 131 patients (41.8%), 79 women and 52 men. At diagnosis, median age was 58 years and 86.3% had an ECOG performance status of 0 or 1. Most individuals were never smokers (48.9%) and 53.4% had CNS involvement on initial presentation. Overall, EGFR activating mutations were the most frequent (62.1%), followed by ALK rearrangement (16.7%), KRAS mutation (9.8%), MET mutation (4.5%) and RET rearrangement (3.0%). Only 1.5% of patients showed genetic alterations in ROS1 and BRAF. Mutations in HER2 were very uncommon (0.8%). The majority of patients (47.3%) received cytotoxic chemotherapy as first-line systemic treatment and targeted therapy (TKIs) afterwards. Local therapies for brain metastases were performed in 69.5%. **Conclusion:** Our findings were somewhat concordant with those of international databases. We found a high frequency of EGFR mutations in this population, possibly explained by the longer life expectancy of these patients. Many of the patients were treated with systemic and local therapies, reflecting our institution standard approach to CNSm. A prospective analysis is required to better determine the prognostic value of these findings and their correlation with different outcomes.

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RISK FACTORS FOR LOCAL RECURRENCE AND METASTASIS IN SOLITARY FIBROUS TUMOR

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Introduction: Solitary fibrous tumor (SFT) is a rare soft tissue sarcoma, with fibroblastic differentiation. It is generally associated with low rates of local recurrence or metastasis (REC/MT). Tumor size, high mitotic rates, necrosis/hemorrhage, positive resection margins and nuclear pleomorphism are suggest to impact prognostic. However, eminent risk factors for aggressive phenotype are not well defined. **Objectives:** Primary objective was

to analyze factors associated with REC/MT in patients (pts) with SFT. Secondary objectives were to evaluate disease free survival (DFS) in non-metastatic (non-MT) pts at diagnosis and its associated factors and to evaluate overall survival (OS). **Methods:** Retrospective analysis of pts diagnosed with SFT were performed in a sigle center in Brazil. Descriptive statistics were used to evaluate population characteristics and REC/MT occurrence. X^2 test was used to proportional comparative analysis and logistic regression to determine factors associated with REC-MTX in global population. Kaplan Meier, Log-Rank test and Cox Regression were used to survival analysis. **Results:** From April, 1971 to May, 2018, 86 pts were treated. Median follow-up was 6 years (y). 69 (80.2%) were alive on the cut-off date. Median age at diagnosis was 48y. 40.7% were men. Main primary sites were pleura (20.9%) and extremities (14.0%). 76 (88.4%) had surgery and 15 (17.4%) radiotherapy for the primary tumor. 34 (39.5%) had REC/MT, of whom,10 (11.6%) had MT at diagnosis. Median OS of global population was 25y (95%CI 12.2-37.7) and of REC/MT subgroup was 13y (95%CI 8.3-17.7). Tumor > 10cm and presence of any risk factor (tumor > 10cm, necrosis, positive margins or ≥ 4/10 mitosis) were associated with REC/MT in the univariate analysis. Presence of necrosis (p = 0.045) was an independent factor for REC/MT in the multivariate analysis. Considering 76 pts with non-MT disease at diagnosis, median DFS was 11y (95%CI 4.5-17.5). DFS was superior for pts without any risk factor (not reached versus 6y; HR 0.26, 95%CI 0.09-0.76; p = 0.015) and < 4/10 mitosis (not reached versus 4y; HR 0.37 95%CI 0.14-0.96). Presence of necrosis was independent associated with inferior DFS in multivariate analysis (p = 0.43). **Conclusions:** SFT is an indolent neoplasm, with prolonged survival even in REC/MT scenario and with long DFS, which highlights the relevance of long term follow-up of pts. Presence of necrosis were associated with development of REC/MT and poor DFS in this study.

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PROGNOSTIC IMPACT AND POTENTIAL PREDICTIVE ROLE OF CIRCULATING TUMOR CELLS (CTCS) AND MICROEMBOLI (CTM) IN LOCALLY ADVANCED HEAD AND NECK SQUAMOUS CELL CARCINOMA (LAHNSCC)

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Introduction: The prognostic role of CTCs and CTM in locally advanced head and neck squamous cell carcinoma (LAHNSCC) is yet to be determined, with most available trials utilizing cytokeratin dependent techniques for identification and counting of CTCs. The role of induction chemotherapy (ICT) in the management of LAHNSCC is controversial, with conflicting results in the literature, and no predictive biomarkers to guide the choice of treatment strategy. The aim of this trial is to determine the prognostic impact of circulating tumor cells (CTCs) and microemboli (CTM) and its potential role as a predictor of ICT benefit in LAHNSCC. **Methods:** In this prospective study, peripheral blood samples of patients with non-metastatic LAHNSCC, stages III/IV, candidates for a non-surgical strategy (unresectable or organ preservation) with RT concurrent with chemotherapy (CT) or cetuximab, preceded or not by induction CT (ICT), were analyzed for CTCs and CTM before treatment, using the ISET (isolation by size of epithelial tumor cells) method. **Results:** Sixty-seven patients were included, 33 underwent ICT and 34 initial RT. The detection rate of baseline CTCs and CTM were 94% (63/67) and 23% (15/67) respectively. The CTCs counts were significantly correlated with survival, with an a relative increase of 20% in the risk of death (HR = 1.20; IC95%: 1.08-1.33; p < 0,001), 23% in the risk of progression (HR = 1.23; IC95%: 1.08-1.40; p = 0.004) and a reduction of 26% in the odds of complete response to treatment (OR = 0.74; CI95%: 0.58-0.95; p = 0.022) for each increase of one CTC. The presence of CTM was also correlated with worse OS (HR = 3.01; IC95%: 1.06-8.52; p = 0.029) and PFS (HR = 3.84; IC95%: 1.62-9.11; p < 0.001). High CTCs counts (cut-off 3.8/mL) and presence of CTM were potential predictors of benefit of ICT. In patients with CTCs ≤ 3,8 CTCs/mL 2y-OS was 88% for ICT versus 80% for initial RT (HR = 0.55; IC95%: 0.10-1.84; p = 0.470), while in patients with CTCs > 3.8/mL 2y-OS was 79% for ICT versus 30% for initial RT (HR = 0.32; IC95%: 0.07-1.38; p = 0.112). The same was observed with CTM, with worse outcomes for initial RT in CTM positive patients, in comparison to the other groups (CTM positive undergoing ICT or CTM negative) both for OS (p = 0.020) and PFS (p < 0.001). Conclusions Baseline CTCs counts and presence of CTM are strongly correlated with survival and response to treatment in LAHNSCC. High CTCs counts and presence of CTM are potential predictors of ICT benefit in this population.

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EARLY BREAST CANCER RH + / HER2 -: MAGEE SCORE AND TENNESSEE NOMOGRAM AS SURROGATES OF GENOMIC TOOL ONCOTYPE DX: EXPERIENCE IN A BRAZILIAN CANCER CENTER

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Introduction: Appropriate selection of adjuvant systemic therapy in early breast cancer RH + / HER2- is classically based on clinical and anatomopathological factors, and recently genomic tests such as Oncotype Dxâ (ODXâ) and Mammaprintâ had refined these decision, mainly avoiding chemotherapy overtreatment. Regarding to ODXâ, some tools were developed in order to parallel the results using routinely available information of pathological reports. Magee score is a prediction model obtained by multiple linear regression analysis, considering Nottingham score, hormone receptor frequency and intensity in neoplastic cells, HER2 status, KI67, and tumor size. Tennessee nomogram was developed based on clinicopathological characteristics such as age, histological type, tumor size and grade and RP status, with a 86.8% concordance in defining low and high risk recurrence scores (0 to 25 and 26 to 100, respectively). **Objective:** To observe the correlation between ODXâ recurrence score (RS) with Magee score and Tennessee nomogram in 83 women with ER+/ HER2- early breast cancer treated at a Cancer Center in Brazil. **Results:** Eighty-three patients with ER + / HER2- early breast cancer who underwent ODXâ were studied. The median age was 53.5 years (24 -77 years), 59% were postmenopausal, 74.7% clinical stage I, with a median tumor size of 1.4cm (0.6-4, 0cm). For ODXâ, RS between 0 to 15 was present in 51.8%, 36.1% from 16 to 25 and 12% higher than 26. The discordance between RS ODXâ and Magee score occurred in 41.5% of the cases (risk groups: low (0-15), intermediate (16-25) and high (26-100), 8.5% if grouped in low-intermediate risk (0-25) and high risk(26-100). In one case (2.5%), there was a two-step discordance, with a low-risk Magee score being at high risk in the ODXâ . The sensitivity of the Magee test, in relation to RS of ODXâ, considering low-intermediate (0-25) and high risk (26-100) was 100%, with specificity of 30% and accuracy of 91%. Regarding Tennessee nomogram, there was discordance with RS ODXâ in 8.4% in low risk group(0-25) and 67% in high risk group(26-100). The sensitivity of Tennessee nomogram was 89%, specificity of 40% and accuracy of 83%. **Conclusions:** Tools such as Magee score and Tennessee nomogram may be useful in therapeutic decision-making when ODXâ is not available. In our experience the results provided by these tools can be strongly considered if they result in low risk for Tennesse nomogram and low-intermediate risk for the Magee score.

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ONCOTYPE DX TESTING IN EARLY-STAGE BREAST CANCER AND IMPACT ON CHEMOTHERAPY USE: A REPORT FROM A REFERENCE CANCER CENTER IN BRAZIL

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Background: Oncotype DX Recurrence Score (ODXRS) is a 21-gene assay that has been validated for the prediction of recurrence and chemotherapy (CH) benefit in hormone receptor positive (HR+), human epidermal growth factor receptor 2 negative (HER2-) and lymph node negative (pN0) breast cancer. It has also been increasingly used in patients (PTS) with 1-3 positive lymph nodes (pN1) in clinical practice. Results from the TAILORx trial support the use of genomic testing in T1-2N0 disease to help with the accurate selection of early breast cancer PTS who can be safely spared chemotherapy. **Objective:** We evaluated the impact of RS testing on adjuvant CH decision-making in routine clinical practice in a Reference Cancer Center. **Methods:** A single-institution retrospective study was conducted to include all patients (PTS) who had an ODXRS test in our cancer center from 2005 to 2019. Clinical and pathology data were extracted from electronic charts. Indications of CH by clinicopathological criteria were based on ASCO 2019 guideline. The ODXRS was recorded and correlated with the indication of CH in patients ≤ 50yo and > 50yo, according to TAILORx design. We assessed the prognostic information provided by a binary clinical-risk categorization based on the Adjuvant! Algorithm. **Results:** Two hundred and seventy-five PTS with HR+, HER2 -, pN0 or pN1 breast cancer were included. One hundred and fourteen PTS (41.4%) were ≤ 50yo and one hundred and sixty-one PTS (58.5%) were > 50yo. Fifty PTS (13.75%) were node positive. The ODXRS was low (< 11), intermediate (11-25) and high (> 25) in 58 (21.1%), 178 (64.7%) and 39 (14.2%) PTS, respectively. For patients > 50yo, twenty-four (14.9%) had high-risk ODXRS. For patients ≤ 50yo, fifty-six (49.1%) had ODXRS ≤ 15, forty-three (37.7%) had ODXRS 16-25, fifteen (13.1%) had RS > 25. In all patients, the ODXRS result allowed 74.5% to avoid unnecessary adjuvant CH. Of PTS ≤ 50yo, 57.2% were spared CH. In PTS > 50yo, the assay reduced the use of CH by 85.2%. Some patients presented intermediate clinical-pathological criteria (ICCP) for indication of CH according to ASCO guideline (unclear indication). In this group (ICCP), only

22.7% of the PTS ≤ 50yo and 17.5% of the PTS > 50yo actually received CH when an ODXRS was available. **Conclusions:** Incorporating ODXRS testing into routine clinical practice for selected node-negative and node-positive breast cancer patients significantly reduces the use of CH.

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THE PROGNOSTIC VALUE OF VEGF-C, -D AND ITS COGNATE RECEPTORS IN GLIOBLASTOMA PATIENTS

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Introduction: So far, only few studies have investigated the patterns of angiogenesis markers in human Glioblastoma (GBM), mostly focused on vascular endothelial growth factor type A (VEGF-A). Until recently, VEGF-C and -D were not researched targets due to their established primarily role in lymphangiogenesis, which were considered absent in CNS. **Objective:** to evaluate the expression of VEGF-A, -C, -D and its receptors, VEGFR-1, -2, and -3 and clinical data for potential relations with common clinicopathological features and outcomes, as well as to investigate the prognostic value of different VEGF family members. **Methods:** tumor tissue samples of 70 GBM patients were assessed by immunohistochemistry assay using tissue microarray construction for VEGF families and its cognate receptors. The medical records of those patients were reviewed to obtain relevant clinical and therapeutical data. **Results:** the VEGF-A immunoreactivity was observed in 57 (81.4%) tumor cells of GBM samples. VEGF-C was expressed in 53 (75.7%) and, VEGF-D was seen in 55 (78.6%). The frequency of immunoexpression of VEGFRs was as follow: VEGFR-1, 65 (92.9%); -2, 63 (90%); -3, 49 (70%). No expression of VEGF-C, -D, and VEGFR-2, -3 was observed in normal brain tissue. Overall, there were no significant differences in overall survival regardless the staining intensity on tumor cells. A weak and monotonous correlation pattern was observed between VEGF and its cognate receptors. Intermediate correlation was only found for VEGFA and VEGFR2 (Spearman = 0.478), as for VEGFD and VEGFR2 (Spearman = 0.456). **Conclusion:** there were no significant differences in OS regardless the immunostaining intensity of VEGF and its cognate receptors on tumor cells. The overexpression of the axis of VEGF-C, -D, VEGFR-2 and -3 might be interpreted as an investigational target to clarify that theory, especially given the recent data that suggests that there is a complex lymphatic system in CNS and its development and modeling may be closed related to the interactions between VEGF-C and VEGFR-3. Further studies are needed to ascertain the increasing role of VEGF-C, - D and its receptors VEGFR-2 and -3 in GBM patients.

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CIRCULATING CELL-FREE DNA AS PROGNOSTIC AND MOLECULAR BIOMARKER FOR PATIENTS WITH GLIOBLASTOMA UNDER INHALED PERILLYL ALCOHOL TREATMENT

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Anabolic, infiltrative and diffuse nature of glioblastoma (GBM) impairs complete surgical resection favouring tumor recurrence due to radio and chemoresistance and oncogenic metabolic reprogramming. Despite recent advances on brain imaging, up to now there is no diagnostic tool capable to detect incipient tumor niches and differentiate from inflammatory infiltrate/radionecrosis. Intranasal administration of perillyl alcohol (POH) is a novel adjuvant therapy known to increase survival of patients with recurrent GBM (rGBM). Patients with cancer present high levels of circulating cell-free DNA (cfDNA) as result of intense tumor activity (necrosis and apoptosis), thus providing a noninvasive screening tool for early tumor recurrence prior to image detection. We aimed to verify the potential of cfDNA as a biomarker to differentiate cancer patients from healthy subjects and monitor patients response to POH therapy. The cohort included 130 healthy subjects as control-paired group and 56 rGBM patients at terminal stage enrolled in POH trial (CONEP 9681/ 25000.009267/2004-25). rGBM patients response to POH therapy were evaluated based on cfDNA quantification and magnetic resonance image (MRI). Mean cfDNA levels of rGBM patients were 29.5-fold increased (1,179.7 ng/mL) compared to healthy subjects (40 ng/mL). Receiver operating characteristics (ROC) analysis revealed good degree of sensibility and specificity of cfDNA in discriminating patients from controls (area under the curve, AUC = 0.994). It was observed a significant (p = 0.034) difference on cfDNA levels considering mean survival time of 72 weeks. Hence mean cfDNA levels were highly augmented (1.546,7ng/mL) for those patients with lower survival

(mean: 26.31 weeks) compared to patients with longer survival (mean:167 weeks; cfDNA = 465 ng/mL), with a weak, significant and negative correlation between these variables (p = 0.031, rho = -0.288). Log-rank analysis (Kaplan Meier) showed significant differences regarding probabilities of survival for both patient groups (p < 0.0001). Maintenance of low cfDNA levels and MRI pattern of complete response was consistently observed for those patients with longer survival (higher than 6 years) under of POH therapy. However, therapy discontinuation caused a 2.35-fold increase of cfDNA levels and MRI compatible with tumor recurrence. Such findings point cfDNA as a non-invasive method to early detect tumor recurrence and monitor rGBM response to therapy.

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CÓDIGO: 88333

ONCOTAG BIOMARKER PANEL TO PROGNOSIS ANALYSIS IN EPITHELIAL OVARIAN CANCER

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Ovarian cancer (OC) comprises heterogeneous and complex diseases group and represents the most lethal gynecologic cancer. In 2018, it was estimated to be responsible for 295,414 new cases and 184,799 deaths worldwide. Late-stage diagnosis associated with a lack of effective molecular markers to detect chemotherapy resistance contributes to high mortality and poor prognosis of epithelial ovarian cancer (EOC). For invasive or recurrent EOC, individualized assessments and optimized management are especially required. In this way, OncoTag was developed as biopsy-based gene expression assay to discriminate bad or favorable prognosis in EOC patient. We measured the expression apoptosis-related pathway genes and associate them with clinical-pathological patients features to examine its prognosis significance, with the ultimate goal of advancing patient care. Prospectively defined observational study was performed. The cohort were stratified according to stage, grade and histological subtype of tumor, overall and disease-free survival. Tissues were obtained from 28 women, shared into primary and metastatic EOC and 18 normal ovary patients (as control) who underwent surgical treatment at Hospital das Clínicas/Faculdade de Medicina/UFMG, between 2008 and 2011, after informed consent. RNA was extracted from each sample, treated with DNase I to remove genomic DNA and total RNA content was quantified. Reverse transcription polymerase chain reaction (RT-PCR) was used to convert RNA to complementary DNA prior to determine gene expression profile by quantitative PCR. Using statistics methods and supervised and unsupervised machine learning approaches, we characterized and validated the molecular targets. Our results appointed that there were statistically significant differences in gene expression profile between patients groups (p < 0.05), demonstrating the EOC genetic heterogeneity. Molecular classifier algorithm proved the diagnostic and prognostic value of genes evaluated. Decisions trees and biomarker clusters were constructed. In the training set, the classifier reported 90% and 89.4% of specificity and sensibility to predict occult metastasis and platinum resistance, respectively. Besides of that, the hierarchical clustering allowed us to classify each patient using the cutoff obtained by classifier algorithm. Our results can be considered in clinical practice for help in finding EOC treatment options, improving outcomes and support a more informed clinical decision.

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TEMÁRIO: TUMORES GINECOLÓGICOS
CÓDIGO: 87456

ESTIMATED COSTS OF CERVICAL CANCER CARE IN A PUBLIC REFERENCE HOSPITAL

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Introduction: Although cervical cancer is a potentially avoidable and curable neoplasm, it presents a high incidence and mortality, especially in developing countries where it represents the third most frequent type of cancer and the third cause of cancer death among women. **Objective:** The objective of this study is to estimate the direct medical costs of cervical cancer care in a public reference hospital for Oncology in Southern Brazil. **Methods:** A retrospective cohort of cervical cancer patients diagnosed and treated at the General Hospital of Caxias do Sul between January 2012

and December 2016 was identified by CID C53.9. The economical analysis was estimated from individual cost of each patient to the national unified health system (SUS). The procedures were identified and quantified per patient, and monetary values were assigned, consolidated per care phase predefined by researchers. The descriptive analyses for costs were expressed in Reais (R$). **Results:** 130 patients with cervical cancer treated at the institution were evaluated. Overall, the cohort represented a cost of R$ 1,383,031.00, being 50.9% (R$ 794,612.00) related to outpatient care, 11.3% (R$ 156,323.00) to hospitalizations, 15.2% (R$ 211,189.00) to surgical procedures and 13.2% (R$ 187,363.00) to imaging exams. Considering only outpatient care, 58.3% (R$ 463,240.00) of costs were destined to chemotherapy and 41.7% (R$ 241,372.00) to radiotherapy. **Conclusion:** This study provides relevant data regarding the cost of cervical cancer patients assisted in a public reference hospital. In addition, the study reinforces the impact of this problem to the national public health system, corroborating that primary and secondary preventions of this neoplasm should be prioritized.

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TEMÁRIO: TUMORES NEUROENDÓCRINOS
CÓDIGO: 87303

HIGH-GRADE WELL- AND POORLY DIFFERENTIATED DIGESTIVE NEUROENDOCRINE NEOPLASMS: CLINICAL IMPLICATIONS FOR DISTINCT ENTITIES

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Introduction: Grade 3 (G3) gastroenteropancreatic (GEP) neuroendocrine neoplasms (NEN) are rare, with a dismal prognosis. The 2017 WHO subclassified the G3 pancreatic group into high grade (poorly differentiated carcinoma NEC) or neuroendocrine tumors (G3-NET). Yet few data exist on how this subclassification applies to other digestive G3-NEN. **Aim:** We planned to evaluate the clinical and pathological characteristics of GEP G3-NET and NEC. Materials and **Methods:** We retrospectively and consecutively collected clinicopathological data of all G3-GEP-NEN patients (pts) from a single institution between 2000 and 2019. Data were gathered from electronic clinical charts and cases with available tumor tissues were centrally reviewed and reclassified according to WHO 2017. The primary endpoint was overall survival (OS), calculated from the date of diagnosis of G3 disease. Descriptive statistics was used to report population characteristics, OS was calculated with the Kaplan-Meier method. **Results:** Seventy-seven G3-GEP-NEN pts were included: mean age at the diagnosis was 58.9 years (± 15) and 62% (48/77) were males. The most common primary site was gastric (27%, 21/77), followed by pancreas (23%, 18/77), unknown primary (23%, 18/77), colorectal (18%, 14/77) and others (midgut plus anal) with 8% (6/77). Metastatic disease was present in 69% (53/77) at diagnosis and 91% (70/77) evolved to metastatic disease. Overall 77% (59/77) received a platinum-based chemotherapy and 42 (54%) pts underwent only one line of treatment. The reviewed pathology was available in 56% (43/77): 29 cases were NEC (67%) and 14 were G3-NET (33%). This reflects a change in diagnosis of 23% (10/43). In a median follow-up of 57.9 months, the median survival of all pts was 22.9 months. The group with Ki-67 lower than 55% had a median OS of 58 months vs 13 months for Ki-67 above 55% (p = 0.003). The median OS of the non-pancreatic digestive G3-NET, the pancreatic NET-G3 and the GEP-NEC were 61.2, 57.4 and 13.0 months, respectively (non-pancreatic G3-NET vs NEC, p = 0.007). In the non-pancreatic NEC subgroup, there was no OS difference between small versus large cell histology (p = 0.7). **Conclusion:** Non-pancreatic digestive G3-NET is associated with increased survival compared to non-pancreatic NEC, resembling the prognosis of G2 GEP-NET. This indicates that histological differentiation is essential for prognosis and treatment planning, as some NET-G3 pts may be treated as G2 NET.

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TEMÁRIO: TUMORES NEUROENDÓCRINOS
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HEALTH RESOURCE UTILIZATION BY PATIENTS WITH NEUROENDOCRINE TUMORS WITH OR WITHOUT CARCINOID HEART DISEASE

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Background: Patients (pts) with neuroendocrine tumors (NET) and carcinoid syndrome may present carcinoid heart disease (CHD) as a late complication of tumor-related hormonal secretion. A multicenter study conducted by our group identified a frequency of CHD of 34.5% among Latin American pts and it was associated with increased mortality. However, the extent to which these pts utilize health resources has not been evaluated. Aim (s): To evaluate the types and frequencies of health resources used by NET pts, according to the presence of CHD. **Methods:** This was a multicentric study of consecutive pts treated in 7 hospitals in Latin America. The study sample was obtained from the database of all consecutive NET cases with elevated urinary 5HIAA from participating centers. CHD was defined as at least moderate right-valve regurgitation by an echocardiogram. We considered as health resource utilization (HRU) number of hospital visits, admissions and length of stay, number of echocardiograms and somatostatin analog use. Descriptive statistics were used to report pts characteristics. To compare HRU between pts with and without CHD, we used the chi-squared test for binary variables and variance analysis for quantitative correlations. Observations with missing data were excluded from the analyses. **Results:** 137 pts were evaluated: 41 (29.9%) with and 96 (70%) without CHD. Pts with and without CHD had, respectively: mean age of 59 and 54 years, 29 (21.2%) and 45 (32.9%) had cardiovascular comorbidities, 30 (21.8%) and 47 (34.3%) were female, 30 (21.9%) and 51 (37.2%) were treated in a public setting. Pts with vs without CHD presented: higher number of elective medical visits (N = 124, Mean: 37 vs 25; p = 0.017) and emergency visits (N = 124, Mean: 3.3 vs 2.2; p = 0.110), echocardiograms (N = 123, Mean: 4 vs 2; p = 0.0001). Pts with CHD were less frequently treated with somatostatin analogs (N = 136, 28.7% vs 60.3%; p = 0.04). The frequency of Intensive Care Unit admissions was similar between the groups. (p = 0.11). **Conclusion:** We found that pts with CHD experience much more HRU and are less often treated with somatostatin analogs when compared to pts without CHD. Given that CHD in Latin America is significantly more frequent in the public system, our data suggest that access to effective therapies is essential to reduce the incidence of CHD and consequently, HRU.

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TEMÁRIO: TUMORES TGI INFERIOR (COLON/RETO/ÂNUS)
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MOLECULAR AND CLINICAL IMPACT OF INTESTINAL MICROBIOTA IN PATIENTS WITH COLORRETAL CARCINOMA OF BARRETOS CANCER HOSPITAL

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Introduction: Microbial diversity has been pointed as a major factor in the development and progression of colorectal cancer (CRC). Objective and **Methods:** We sought to explore the richness and abundance of the microbial community of a series of colorectal tumor samples treated at Barretos Cancer Hospital, Brazil, through 16S rRNA sequencing. The presence and the impact of Fusobacterium nucleatum (Fn) DNA in CRC prognosis was further evaluated by qPCR in a series of 152 colorectal cancer cases. **Results:** An enrichment for potentially oncogenic bacteria in CRC was observed, with Fusobacterium being the most abundant genus in the tumor tissue. In the validation dataset, Fn was detected in 35/152 (23.0%) of fresh-frozen tumor samples and in 6/57 (10.5%) of paired normal adjacent tissue, with higher levels in the tumor (p = 0.0033). Fn DNA in the tumor tissue was significantly associated with proximal tumors(p = 0.001), higher depth of invasion (p = 0.014), higher clinical stages (p = 0.033), poor-differentiation (p = 0.011), MSI-positive status (p < 0.0001), BRAF mutated tumors (p < 0.0001), and with the loss of expression of mismatch-repair proteins MLH1 (p < 0.0001), MSH2 (p = 0.003) and PMS2 (p < 0.0001). Moreover, the presence of Fn DNA in CRC tissue was also associated with a worse patient cancer-specific survival (69.9% versus 82.2% in 5 years; p = 0.028) and overall survival (63.5% versus 76.5%; p = 0.037). **Conclusion:** Here we report, for the first time, the association of F. nucleatum presence with important clinical and molecular features in a Brazilian cohort of CRC patients. Tumor detection and classification based on the gut microbiome might provide a promising approach to improve the prediction of patient outcome.

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TEMÁRIO: TUMORES TGI INFERIOR (COLON/RETO/ÂNUS)
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THE PROGNOSTIC INFLUENCE OF TUMOR BUDDING IN A LARGE SERIES OF WESTERN PATIENTS WITH STAGE II COLORECTAL CANCER

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Background: Tumor budding (TB) refers to dedifferentiation and loss of tumor cohesiveness and is defined as the presence of cells isolated or agglomerated with at least 5 cells at the tumor front in microscopic analysis. The International Tumor Budding Consensus Conference (ITBCC) in 2016 proposed a scoring system to standardize the pathology evaluation of TB in colorectal cancer (CRC) as high (H), intermediate (I) and low (L) TB. **Objective:** To evaluate the relapse-free survival (RFS) of stage II CRC patients (pts) as per the ITBCC 2016 classification and associations between TB and patient and tumor features. **Methods:** Between 2007 and 2017, all cases of stage II CRC undergoing surgery, with available tumor tissue and followed up at our center were included. TB and histological grade were centrally reviewed as per the new classification. Study variables were retrospectively retrieved from electronic medical charts. TB (L vs I and H), sidedness, T4, comorbid illnesses, preoperative CEA, vascular-lymphatic [VL] and perineural invasion [PN]) were evaluated in univariate and multivariate analyses Cox regression analyses for RFS (primary endpoint). **Results:** 137 were eligible: median age was 61 years, 38 (27.7%) had right-sided tumors, 71 (51.8%) had left tumors and 28 (20.4%), rectal cancer. 113 (82.5%) pts had T3 and 24 (17.5%), T4 tumors. 13 (9.5%) had VL invasion 15 (10.9%) had PN. L-TB grade was observed in 107 pts (78.1%), I-TB in 21 (15.3%) and H-TB in 9 (6.6%). In a median follow-up of 69 months (95% CI 64-73), the median RFS was 134 months (95% CI 103-164), with 14 pts (10.2%) presenting tumor recurrence: 10 pts (9.6%) with L-TB, 2 pts (11.7%) with I-TB and 2 pts (22.2%) with H-TB. T4 tumors and PN were more commonly seen in the H-TB group. In unadjusted analysis H- and I-TB vs L-TB trended for worse RFS (p 0.067; HR 2.5). Preoperative CEA higher than 4.0 predicted inferior RFS (p 0.02; HR 3.5). In multivariate analysis, TB (H and I vs L; HR 2.6; p 0.059) and not receiving adjuvant chemotherapy (HR 3.7; p 0.020) were independently associated with RFS. Adjuvant chemotherapy was performed in 50 pts (36.5%) and this was associated better RFS (p 0.022; HR 3.7). **Conclusions:** In this large series of Western pts, despite the overall low rate of recurrence, H-TB was associated with increased risk of disease relapse. Yet the indication of adjuvant chemotherapy in this group should be further evaluated.

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TEMÁRIO: TUMORES TGI SUPERIOR (ESTOMAGO, ESÔFAGO, PÂNCREAS, FÍGADO, VIAS BILIARES, DUODENO)
CÓDIGO: 87437

ARE ALL PLATINUM AGENTS INTERCHANGEABLE IN ESOPHAGEAL SQUAMOUS-CELL CARCINOMA (SCC)? A RETROSPECTIVE ANALYSIS

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Introduction: Platinum agents are a paramount class of drug in SCC treatment. Cisplatin and carboplatin became the preferred choices in different squamous-cell tumors, such as head and neck and cervical tumors. Yet, Oxaliplatin is highly active in many gastrointestinal malignancies, like esophageal and gastric adenocarcinoma. We aimed to evaluate the efficacy of different platinum agents in esophageal SCC. **Methods:** We retrospectively analyzed patients with metastatic / recurrent esophageal SCC treated in the first-line setting with a combination regimen including a platinum at a large cancer center. Three groups were identified: Group A, treated with Carboplatin plus Paclitaxel; Group B, treated with an Oxaliplatin regimen (mFOLFOX, CAPOX or mFLOX); Group C treated with Cisplatin plus 5-FU. Our primary endpoint was to compare progression-free survival (PFS) and overall survival (OS) between groups. Descriptive statistics were used to describe main characteristics. Kaplan-Meir and log-rank were used to estimate and compare survival across groups. Chi-square and Fisher were used to compare categorical variables. **Results:** Between Jan/2010 and Dec/2017, sixty-seven patients met our inclusion criteria. Median follow-up time was 59m. Groups A, B and C had 31 (46.3%), 16 (23.9%) and 20 (29.9%) patients respectively. Median age was 65y, 66.5y and 60y for each group. Patients > 65y were 17 (54.8%), 9 (56.3%) and 7 (35%) across groups A, B, C (p = 0.33). ECOG PS was available in 61 cases. ECOG 0-1 was described in 18 (69.2%), 16 (100%) and 15 (78.9%) in each group. Importantly, eight pts (30.7%) had ECOG 2-3 in group A (p = 0.23).PFS was 4.1m, 6.4m and 5.9m in groups A, B and C respectively (p = 0.19). Numerically, more patients in group A stopped chemotherapy due to performance deterioration (A: 40.7%, B: 20%, C: 25%, p = 0.36). OS was 7.1m, 18.8m and 12.1m across groups A, B and C (p = 0.05). Fewer patients in group A received second-line chemotherapy (A: 35.5%, B: 66.7%, C: 75%, p = 0.012). **Conclusion:** In our retrospective analysis, oxaliplatin-based regimens were effective in esophageal SCC. PFS was similar across different regimens. Importantly, more patients in groups B and C underwent second-line treatment and had better performance status. Our analysis has methodological limitations and group imbalances. Nevertheless, we

would consider oxaliplatin regimens as an alternative in first-line treatment of esophageal SCC.

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TEMÁRIO: TUMORES TGI SUPERIOR (ESTOMAGO, ESÔFAGO, PÂNCREAS, FÍGADO, VIAS BILIARES, DUODENO)CÓDIGO: 87121

IMPROVEMENT IN OVERALL SURVIVAL AND QUALITY OF LIFE IN PATIENTS WITH ADVANCED HEPATOCELLULAR CARCINOMA EXPOSED TO LOW ENERGY AMPLITUDE MODULATED ELECTROMAGNETIC FIELDS

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Background: Exposure to amplitude-modulated radiofrequency electromagnetic fields (AM RF EMF) may provide beneficial palliative treatment for patients with advanced HCC (HCC). **Methods:** A single-group, open-label, prospective study was performed to assess the safety, the impact on quality of life (QoL), and the overall survival (OS) associated with exposure to AM RF EMF in HCC patients. The survival data and historical control data comparison was planned. AM RF EMF exposure-related toxicity was assessed in 43 healthy controls and 42 HCC patients. An outpatient AM RF EMF procedure of 120 min was performed once for healthy controls and repeated every 30 days for HCC patients until QoL deterioration, death, or withdrawal of patient consent. EORTC-C30 v3.0 questionnaires were answered immediately before each AM RF EMF treatment. **Results:** Out of 42 HCC patients, 16 received AM RF EMF alone and 26 in combination with systemic standard therapy. Neither healthy controls nor HCC patients experienced any exposure-related limiting toxicity associated with AM RF EMF procedures. Considering 30 HCC patients with at least two exposures, 63.3% of them reported QoL improvement within 30 days after the first AM RF EMF. With a median follow-up of +264 days in the prospective study patients, the median OS was not reached after +341 days, which is significantly longer than the mOS of historical controls (p = 0.0091). **Conclusion:** A 120-min monthly AM RFE MF procedure was safe, well-tolerated and showed meaningful improvement in QoL and overall survival in comparison with historical control (NCT 01686412).

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TEMÁRIO: TUMORES UROLÓGICOS PRÓSTATA
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COMPARISON OF FIRST-LINE DOCETAXEL OR ABIRATERONE/ENZALUTAMIDE IN LOW AND HIGH-VOLUME DISEASE METASTATIC CASTRATION RESISTANT PROSTATE CANCER

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Introduction: Chemotherapy with docetaxel (Doc) or hormonotherapy (HT) with abiraterone/enzalutamide (Abi/EZ) are currently options of first-line therapy (1stL) in metastatic castration resistant prostate cancer (mCRPC). However, there are no prospective comparisons that define the best treatment choice in the different presentations of mCRPC. **Objectives:** The primary objective was to compare progression-free survival (PFS) between HT and Doc in high-volume disease (visceral disease or ≥ 4 bone lesions with at least one extra-axial) - HD - and low-volume disease (LD) mCRPC. Secondary objectives were to evaluate PFS and overall survival (OS) in global population; OS and PFS in second line therapy (PFS2) in HD and LD; to define prognostic factors. **Methods:** Retrospective analysis of mCRPC patients (pts) treated with Doc or HT with Abi/EZ in 1stL were conducted in a single center in Brazil. Descriptive statistics were used to determine population characteristics. Kaplan-Meier, Log-Rank Test and Cox Regression were used for survival analysis. **Results:** From January, 2012 to September, 2017, 167 pts with mCRPC received 1stL. 65 (38.9%) were alive at cut-off date. Median follow-up was 41 months (m). Median age at diagnosis was 64 (44-84) years, Gleason score was 8, and initial PSA 19 (1.2-5000). 140 (83.8%) pts had high risk according Damico criteria. 97 (58.1%) had HD and 70 (13.8%) LD in 1stL. 114 (68.3%) underwent HT and 53 (31.7%) Doc. Median PFS and OS of global population were 9.0m (95%CI 7.30-10.70) and 32m (95%CI 28.3-35.7), respectively. PFS was superior for HT versus Doc (12m vs 5m; HR 2.76, 95%CI 1.91-3.98; p < 0.001) and OS did not differ between the groups (33m vs 28m; HR 1.16, 95%CI 0.77-1.75; p = 0.46). In LD group, 13 (18.6%) underwent Doc and 57 (81.4%) HT. Median PFS was

13m (95%CI 9.58-16.42). PFS for HT was 17.0m and for Doc 4.0m (HR 4.46, 95%CI 2.20-9.01; $p < 0.001$). In HD group, 40 (41.2%) underwent Doc and 57 (58.8%) HT. Median PFS was 7m (95%CI 5.49-8.51). PFS for HT was 8.0m and for Doc 5.0m (HR 1.89, 95%CI 1.22-2.92; $p = 0.004$). PFS2 and OS were similar for HT and Doc in the two groups. HT and PSA decrease ≥ 50% (PSAde) were associated with prolonged PFS in multivariate analysis either in LD or HD. HD was an independent risk for inferior OS in global population multivariate analysis. **Conclusions:** HT with Abi/EZ was associated with prolonged PFS either in HD or LD groups, as was PSAde. Pts with HD had inferior OS than pts with LD.

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TEMÁRIO: CUIDADOS PALIATIVOS/SUPORTE/TERMINALIDADE
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ANALYSIS OF THE EPIDEMIOLOGICAL AND CLINICAL VARIABLES OF THE CANCER PATIENTS UNDERGOING PALLIATIVE CARE USING INTRATHECAL ANALGESIA

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Introduction: The use of analgesic drugs is very helpful for pain management. In oncology patients, the intrathecal infusion pump can be used as palliative care to improve chronic pain resulting from cancer. **Objective:** To analyze epidemiological and clinical variables of oncological patients undergoing palliative treatment with intrathecal infusion pump at services from Aracaju/SE, between 2013 and 2018. **Method:** This was a descriptive study of the epidemiological and clinical variables of cancer patients undergoing palliative pain treatment with intrathecal infusion pump at services from Aracaju/SE from 2013 to 2018. Diagnoses were organized according to the systemic groups of neoplasms in chapter II of ICD -10 (Neoplasms). **Results:** Of the 33 patients, 39.4% (13) were male and 60.6% (20) were female. The mean age was 61.3 years, ranging from 27 to 82. According to comorbidities, 39.4% (13) presented none; 57.6% (19), systemic arterial hypertension; 24.2% (8), diabetes mellitus; 3.0% (1), renal failure; 3.0% (1), hypothyroidism. Regarding indication, 100% (33) had indication for chronic pain. The diagnoses were: 27.3% (9) of malignant neoplasms of digestive organs; 15.2% (5) of malignant neoplasms of respiratory tract and intrathoracic organs; 15.2% (5) of malignant neoplasms of female genital organs; 12.1% (4) of malignant neoplasms of male genital organs; 9.1% (3) melanoma and other malignant neoplasms of skin; 9.1% (3) of malignant neoplasms of urinary tract; 6.1% (2) of malignant neoplasms of breast; 3.0% (1) of malignant neoplasms of lip, oral cavity and pharynx; and 3.0% (1) of malignant neoplasms of lymphoid, hematopoietic and related tissue. 81.8% (27) presented tumor metastasis. During the surgeries to implant the pump, there were not any intercurrences. The mean time using the pump was 2.2 years, ranging from 1 to 6. Only 1 (3.0%) patient had a pump discontinuity due to death. The most used drugs in the pump were morphine, fentanest, fentanyl, midazolam, dipyrone and pregabalin. **Conclusion:** Cancer patients search for alternatives to treat chronic pain. Thus, knowledge and improvement of palliative techniques are important for the care and the quality of life of these patients.

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CHEMOTHERAPY ADMINISTERED WITHIN THE LAST 30 DAYS OF LIFE AND END OF LIFE ADMISSION TO ICU IN A BRAZILIAN PRIVATE HOSPITAL

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Introduction: percentage of patients who were admitted to ICU on the last day or received anticancer treatment within the last 30 days of life are indicators recognized as inversely proportional to the quality of care offered to terminally ill cancer patients, since they may be linked to dysthanasia. Retrospective analyzes in several countries show that approximately 10% of the patients received chemotherapy within the last month of life. There are few data on this practice in Brazil. **Objective:** to evaluate the rate of anticancer treatment use within the last 30 days of life and the rate of patients admitted to ICU on their end of life period in the clinical practice of a private hospital in Brazil. **Method:** retrospective analysis of medical records of patients who died during 2018 in a private general hospital with outpatient oncology care. Chi-square test was used to compare different groups of patients. **Results:** 244 patients diagnosed with cancer died during 2018. Of these patients, 158 (65%) were on outpatient treatment at the same hospital (SH), 54 (22%) were on outpatient treatment at other clinics (OC) and 32 (13%) were newly diagnosed (ND). 40% of the patients received anticancer treatment during the last 30 days of life, ranging from 47% among SH to 26% among OC patients ($p < 0.01$) and 31% among ND patients ($p = 0.11$). 32% of the patients died in ICU, ranging from 27% among SH to 33% among OC patients ($p = 0,39$) and 56% among ND patients ($p < 0,01$). **Conclusion:** regarding previous data, there certainly are opportunities for improvement in both indicators. Patients on outpatient treatment at the same hospital, probably due to the greater involvement of the family with the care team and the existence of an outpatient palliative care program, were more likely not to die in ICU. Newly diagnosed patients more often died in ICU. Medical staff seemly was more prone to discontinue systemic anticancer treatment of other doctors than of their own patients.

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CUTANEOUS ACCEPTABILITY AND HYDRATATION OF TOPICAL PRODUCTS IN PATIENTS UNDERGOING RADIOTHERAPY AND ANTINEOPLASTIC TREATMENT

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Background: New antineoplastic agents have increased the survival rate of patients, however, the incidence of cutaneous skin toxicity, which leads to worsening in the quality of life and to the necessity of interrupting the treatment, continues presently. Natural agents, as Aloe vera and Calendula, have been suggested as potential ways of prevention and treatment for radiation dermatitis resulting from radiotherapy, providing better adhesion to the therapies and improving the wellbeing of the patients. **Purpose:** Our prospective, open-label, single group, 4-week and single-center clinical study evaluated the cutaneous acceptability and hydrating effect of 4 topical test products in participants undergoing radiotherapy and antineoplastic treatment. **Methods:** Both sex participants, with Fitzpatrick phototype classification I-IV undergoing oncological treatments, were included. The participants received a prescription to self-applied topical test products - product A (Washcare), B (Moistcare), C (Extremecare) and D (Coolcare Mask) in the most affect regions of the body during 30 days. Products acceptability and skin hydration were evaluated considering the occurrence of skin adverse reaction, participants self-reported feelings of skin discomfort, dermatologist and instrumental skin hydration evaluation. **Results:** Thirty-three participants initiated and completed the study. None of them had skin reactions or discomfort in the area of application, and no adverse events were reported. Twenty-five participants (75.8%) reported improvement in skin hydration after using the test products, while 8 participants (24.2%) observed the maintenance of hydration (p < 0,005). **Conclusion:** Investigational products demonstrated a good cutaneous acceptance and an effective hydrating outcome, enabling the suggestion of indication in order to alleviate dryness derived from oncological treatments.

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CÚRCUMA PARA A PREVENÇÃO DA SÍNDROME DE PÉ DE MÃO INDUZIDA POR CAPECITABINA: ESTUDO PILOTO

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Introduction: Hand-foot Syndrome (HFS) is common and frequently occurs in the first cycle of treatment in approximately 40 to 50% of patients who receive capecitabine. Turmeric (Curcuma longa) is a plant used by Ayurvedic medicine with clinical activity in various inflammatory conditions. Our objective was to evaluate if turmeric was active for the prevention of capecitabine-induced HFS. OBJECT AND METHODS We included patients older than 18 years of age without previous exposure to capecitabine who were scheduled to receive this medication. Before starting treatment, after three weeks and at the end of six weeks, we evaluated dermatologic toxicity, conducted quality of life questionnaires (EORTC-QLQC30 and DLQI) and collected serum inflammatory biomarkers (IL-6, TNF-α, CRP, and albumin). We administered turmeric at a dose of 4 g/day (2 pills 12 hours apart) starting at the beginning of capecitabine treatment and lasting six weeks. We included 40 patients whose mean age was 62 years. Most were female (80%), 52% had breast cancer, and 47.5% had GI tumors. RESULTS After the first cycle of capecitabine treatment, we observed that a total of 11 of 40 patients developed HFS (27.5%; 95% CI: 15 42%), whereas four patients developed HFS equal or superior to grade 2 (10%; 95% CI: 3.3 23%). CONCLUSION We did not find any correlations between the aforementioned inflammatory markers tested with HFS. We show that turmeric can be combined with capecitabine and seems to produce a lower rate of HFS, especially grade 2 or higher. These findings need to be reproduced in larger controlled studies. **Keywords:** Turmeric. Capecitabine. Hand Foot Syndrome. The authorsdeclarenoconflicts of interest.The authors alone are responsible for the content andwriting of the article.

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DEPRESCRIPTION ON ONCOLOGICAL PALLIATIVE CARE: AN INTEGRATING REVIEW

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Patients on Oncologic Palliative Care (OPC), due to diverse symptomatology and variable severity, tend to present polypharmacy that, although it seems justifiable in many cases, can pose health risks and negative consequences on patients' quality of life. Thus, it is necessary to evaluate the presence of possible therapeutic futilities, guiding the process of deprescription, in which there is a reduction in the amount of medication after reviewing the treatment objectives and assessing risks and benefits. The objective of this study was to identify the main classes of drugs that are candidates for the deprescription for OPC patients by reviewing the literature of the last 8 years. The bibliographic search was performed in the Medline and LILACS databases. Inclusion criteria were articles published between 2010 and 2018, which dealt with the topic of deprescription in OPC. The publications were analyzed for Qualis and the level of scientific evidence, in order to identify the main drugs candidates for deprescription. Twenty articles were evaluated, being only 4 randomized clinical trials (RCTs), with level II of scientific evidence. Among the classes of drugs that are candidates for deprescription, the following stand out: statins (20.37%) and antihypertensives (20.07%). In addition our study show that Drug Related Problem

2 is the one that is most related to the process of deprescription, since it is a prescription medication that the patient does not need, reflecting the inappropriate use of medications, which can result in increased public health expenditures, interactions with other drugs that are a priority for the patient, as well as the occurrence of Adverse Drug Events, which may lead to an increase in the frequency of hospitalizations. RCTs that corroborate with scientific evidence of quality need to be developed for guidelines that make it possible to deprescribe, especially for the population in OPC. We highlight the importance of the use of tools for deprescribe and to identify inappropriate drugs, the use of medication conciliation as a means of identifying them, as well as pharmacotherapeutic follow-up.

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EPIDEMIOLOGY OF POLYPHARMACY IN OLDER PATIENTS WITH CANCER: PROSPECTIVE COHORT STUDY

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Introduction: In the Comprehensive Geriatric Assessment (CGA), polypharmacy is one of the risk factors for death and reduction of overall survival, which supports the need to analyze its effects on the outcomes of older patients with cancer still not well represented in scientific research. **Objective:** The determination of prevalence of polypharmacy and therapeutic subgroups in elderly oncological patients and the association with the occurrence of death at six and twelve months. **Methods:** A prospective cohort enrolled elderly patients (≥ 60 years) with a recent cancer diagnosis, admitted at a reference hospital in Pernambuco from January 2015 to October 2016. It was considered polypharmacy the use of 5 or more drugs at admission. Multivariate Poisson analyzes were performed to determine the associated factors. Survival curves were estimated using the KaplanMeier method and Coxs proportional hazards model was used to evaluate the risk of death. **Results:** The mean age of the 747 participants was 71.3 (± 7.4) years, with 51,8% male. The prevalence of polypharmacy was 21.3%. The most commonly prescribed therapeutic subgroups were agents acting on the renin-angiotensin system (44%), diuretics (29.5%) and drugs used in diabetes (25.2%). At the moment of admission, the factors associated with polypharmacy were female, current or pre-existing smoking, and the presence of more than two comorbidities. Age-controlled polypharmacy was identified as an independent factor for death at six months (adjusted hazard ratio [HR] = 1.75, 95% confidence interval [CI] 1.19-2.56), and at twelve months (HR = 1.46, 95% CI 1.05-2.02). **Conclusion:** Almost one-quarter of the older patients at the time of diagnosis of cancer were exposed to polypharmacy which was mainly represented by medications for the control of cardiovascular diseases and diabetes. The use of five or more medication was associated with reduction of overall survival in the first six and twelve months after diagnosis of cancer. Polypharmacy is an important tool in AGA application, which can help the oncologist and his multidisciplinary team assess the need for long-term prescriptions for elderly cancer patients and their increased risk of death.

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EVALUATION OF THE EFFECTIVENESS OF CRYOTHERAPY IN THE PREVENTION OF ALOPECIA DURING CHEMOTHERAPY

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Introduction: Alopecia is a stigmatizing adverse event of the patient in chemotherapy, affecting the quality of life, body self-image, sexuality and self-esteem. Its incidence is estimated at more than 60% in the use of alkylating and anti-microtubule agents, 60-100% with topoisomerase inhibitors and 10-50% with antimetabolics, reaching more than 90% of total alopecia with the use of anthracyclines. Cryotherapy is a technique that prevents alopecia through capillary cooling, generating rapid vasocrontriction, reduced local perfusion of chemotherapy and less contact of the medication with the scalp. Objective To evaluate the outcomes of the use of capillary cryotherapy according to chemotherapy and its degree of alopecia. Method Observational analysis of retrospective and uni-institutional cohort of patients submitted to cryotherapy in a private oncology service in João Pessoa-PB, from January 2016 to June 2019. Data collection of electronic medical records was performed, following a created instrument for this purpose, using CTCAE 4.0 classification. Approved in CEP under the number 05617119000005183. Results In a sample of 173 patients performing capillary cryotherapy, 170

were women and 3 men. The mean age of the patients was 54.5 years. Of the sample, 27.7% had arterial hypertension and 13.3% had diabetes mellitus; 57.8% of the women were post menopausal. It was verified that 76.3% of the cases were of breast cancer, with 35.2% (61) of the treatments based on anthracyclines, with prevention of grade 2 alopecia in 85.3%. Considering the non-anthracycline-based regimens, there was prevention of grade 2 alopecia in 97.4% of the cases. Of these, the mean and median time for onset of alopecia were 1 month. It was found that 12.1% of complaints related to cryotherapy were headache, 25% intolerance to cold and 12.1% dizziness. 56% of patients completed the treatment using capillary cryotherapy and 12.7% gave up cryotherapy for alopecia or cold intolerance. Conclusion The research promoted a greater statistical collection on the toxicity addressed, being able to subsidize health professionals about the gaps found in the practice with the prevention of alopecia. It was identified that capillary cryotherapy was effective and guaranteed capillary loss of less than 50% of the threads, with a higher incidence of prevention in protocols that do not involve anthracyclines. Cryotherapy may contribute to reducing stigma and fear of treatment-related toxicity.

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PALLIATIVE CARE WITHOUT BORDERS: A BRAZILIAN MODEL OF DISTANCE CARE

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Background: In the Brazilian Unified Health System (SUS), a large portion of patients initiate cancer treatment with the advanced tumor. This treatment is offered in large centers, so patients need to move. However, when disease-modifying treatment is not an alternative, many return to the home. **Objective:** The objective of this study was to evaluate a model of palliative care performed by telephone as well as to identify the facilitating and hindering aspects in the management of symptoms at a distance. **Methods:** This is a prospective longitudinal study of qualitative and quantitative nature, was performed in a philanthropic oncological hospital located in the Midwest of Brazil. The data collection period was from June 2018 to July 2019. Participated oncology patients assisted by SUS. Patients and family members received calls from the multiprofessional team and the symptoms, active problems and satisfaction level with the type of care offered were evaluated. Patient responses and professional conduct were analyzed and allocated into descriptive categories. **Results:** We analyzed 79 patients with a mean age of 55 years, 64.5% female, the majority (19%) diagnosed with head and neck cancer and the majority resident in Goiás. 50% of the complaints were related to pain, 14% dyspnea and 14% bleeding. The most recurring active problem was the need for medical reports (95%) and prescriptions (23%). Among the patients who showed well being 76.9% were accompanied by a Multiprofessional Home Care Team (EMAD). In addition, it was observed that 57% of the patients who received reinforcement in the orientations regarding the medication schedules achieved symptom improvement, the average satisfaction with the offer of this type of care was 99. However, 35.7% of the actions lost follow-up and 5.5% were not efficient. **Conclusions:** It is necessary to systematize care protocols focused on the management of pain and dyspnea. Telephone service is necessary to control symptoms, has a positive level of satisfaction, EMAD is also fundamental in assisting patients returning to the interior of the country. Difficulties in contacting patients by telephone are obstacles to remote follow-up. Based on these findings, it is important for all psychosocial staff to develop expertise in telephone assistance and to maintain individualized care for patients residing far from cancer treatment centers.

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PALLIATIVE CARE: THE REFLECTION OF THE LACK OF SUPPORT BEDS IN THE OCCUPATION OF TERTIARY BEDS IN AN ONCOLOGICAL HOSPITAL IN SÃO PAULO/ BRAZIL

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Introduction: The importance of palliative care covers both the psychosocial aspects and the adequate control of symptoms of those with advanced disease. In the final phase of life, many patients require institutional support. The support beds / long-stay units in services of low complexity can promote the necessary care and decrease the occupation in tertiary beds. **Objective:** To evaluate the percentage of patients in palliative care who were able to transfer to the support-beds and the reflection of the absence of these beds in the occupation of tertiary beds by patients in palliative care who evolved to death during hospitalization. **Method:**

This work was carried out with information contained in the medical records in conjunction with the registry of patients in palliative care in a Clinical Oncology ward started in 2015. Data were collected from all patients who were attended by the team in the period of 05/01/2015 to 12/31/2016. **Results:** 509 patients were evaluated by the Palliative Care team in the Clinical Oncology ward between 05/2015 and 12/2016. Of the total number of patients evaluated, 78% of the patients belonged to the SUS, 72.7% died in the hospital and only 2 patients (0.4%) were able to transfer to long-stay beds. For patients who evolved to death, the mean time of hospitalization was 13.1 days with a standard deviation of 12.5 days. The average occupancy rate for patients who died was 8.4 beds. In the months of most occupation, up to 17 beds were used by patients in palliative care who died. **Conclusion:** The absence of hospice care has already been demonstrated in a phase III study conducted by Temel et al as an inadequate condition at the end of life. The factors most associated with death in a hospital environment are the absence of a caregiver, limitations of the caregiver due to health problems, single caregiver of old age, presence of more than one member of the community living in need of care, structural limitations or sanitary conditions of the home. Currently, in our country, there are only 177 palliative care services registered in the National Academy of Palliative Care, with 74% working in hospitals and only 5% in hospice. The study showed that only 0.4% of the patients in palliative care at an oncology hospital were able to transfer to the support beds, and in the months of most occupation, up to 17 beds were occupied with this patient profile.

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PERCEPTION OF HEALTH PROFESSIONALS ON ARTIFICIAL FEEDING IN PATIENTS AT LATE STAGE

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Food plays an essential role in people's lives and its importance does not change with time or with the presence of a disease that threatens life. It is common at the end of life or the presence of intolerance to an artificial diet. There are evidences that artificial feeding can worsen suffering at the end of life. However, food has a cultural influence and nourishing to death must be a joint decision of the patient, family and the multidisciplinary team. The purpose of the study is to evaluate the perception of health professionals working in a transition (hospice care and rehabilitation), with 37 beds, in Salvador-BA, on feeding in end-of-life patients. **Method:** in July/2019 an applied questionnaire with the institution's employees. 05 affirmatives were analyzed about the professional's perception of artificial feeding offered to the patient at the end of life. The participants evaluated each of them through 5 points of the Likert scale (1 = totally disagree, 2 = disagree, 3 = do not agree or disagree, 4 = agree; 5 = totally agree). The confidentiality and anonymity of the professionals were guaranteed through data collection, and consent is conjectured via delivery of the questionnaire. **Outcome:** 42 participants were evaluated, mostly (61.9%) of the nursing staff (18 technicians, 6 nurses and 2 caregivers), 4 physicians, 1 nutritionist and 11 other health professionals. Majority of females (85.7%); 15 less than 5 years (35.7%), 17 between 6 and 10 years (40.4%), 8 with more than 10 (19%) and 2 did not respond (4.7%). 10 with Palliative Care training (23.8%), 4 in (9.5%) and 28 without training (66.6%). 93% agreed that the patient in end of life has the right to refuse food. Only 11% agreed with the implantation of catheter for artificial feeding in end-of-life patient. Only 7% considered that not introducing/suspending end-of-life nutrition would speed up the process of death. 69% consider, however, that end-of-life nutrition may contribute to patient discomfort. However, 55% consider that there might be contradictory behaviour within the multidisciplinary team in this theme. **Conclusion:** it is a controversial issue, with divergence of conduct and contradictory attitudes even in a specialized and homogeneous services as a hospice. It is observed the need to expand the study and new discussions on the subject.

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ALTERNATIVAS DE COPING UTILIZADA PELOS ENFERMEIROS DE UM HOSPITAL ONCOLÓGICO DO RIO GRANDE DO NORTE

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Introdução: Devido o câncer ser visto como uma doença bastante temida tanto para aquele que carrega a doença quanto para aqueles que convivem com o paciente dentro e fora do ambiente hospitalar, essa patologia pode a vir tornar-se bastante desgastante. Em consequência ao aumento do estresse no ambiente de trabalho notou-se o crescimento da utilização de uma estratégia denominada coping. A técnica de coping permite que o profissional consiga se preservar ativo no trabalho, exercendo sua função sem se deixar atingir pelos fatores estressantes que

permeiam o ambiente hospitalar possibilitando que o cuidado ao paciente e aos seus familiares não seja afetado **Objetivo:** Identificar quais as estratégias de coping utilizados pelos enfermeiros de um hospital oncológico do Rio Grande do Norte. MÉTODO Trata-se de uma pesquisa quantitativa, de natureza transversal realizada no hospital conveniado com a Liga Norte Riograndense Contra o Câncer (LIGA). A amostra foi composta pelos enfermeiros que se disponibilizaram a participarem do projeto de forma voluntária no período de agosto a outubro de 2018, que trabalhem com pacientes oncológicos. Assim a amostra contabilizou 17 enfermeiros. Para coleta de dados houve aplicação do inventário de estratégias de coping de Folkman e Lazarus e de um questionário sociodemográfico. **Resultado:** Na analise foi observada que a alternativa mais utilizada pelos enfermeiros foi o fator 08 reavaliação positiva sendo o item 23 mudei ou cresci como pessoa de uma maneira positiva o mais assinalado (58,8%) e o fator 1 confronto, sendo o item 47 descontei minha raiva em outra pessoa e o fator 2- afastamento fiz como se nada tivesse acontecido os mais assinalados como não utilizados (64,7%) . **Discussão:** Ao analisarmos o resultado notado que os enfermeiros oncológicos do HLA optam por realizarem a reavaliação positiva. Durante a análise dos resultados, verificou-se que os enfermeiros não fazem uso do confronto ou do afastamento encarando as situações e se permitindo compreender o que de fato ocorreu, logo, para os enfermeiros oncológicos o fator 08 foi o mais assinalado como alternativa mais utilizada e tal ponto está interligado ao fato da instituição apresentar um cuidado com esses profissionais o que fortalece o profissional e o torna apto a encarar as situações, enfrenta-las e crescer. **Conclusão:** O estudo possibilitou a compreensão das estratégias utilizadas pelos enfermeiros oncológicos e como estes utilizam das alternativas de coping.

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CLASSIFICATION OF RISK OF FALL IN ONCOLOGY SERVICE FOR AMBULATORY PATIENTS

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Introduction: Falls are non planned events occuring by variable multifactorial circumstances that can take the patient to the floor, inflicting lesions or not. In order to evaluate the risk of fall which patients are exposed, there are tools used during institutionalization. Within available scales it is possible to quote the National Health Services (NHS) Fall Risk Assessment Scale. The scale is such an instrument provides a systemical evaluation to the professional, making possible to chose the strategy being implemented to prevention the event according to the risk level presented by the patient. When applying the scale, the professional has to evaluate the march stile, falls history, sensory déficit, medications, medical history and memory. **Purpose:** Evaluate the risk of fall shown by ambulatory patients from a reference Oncology hospital at Parana State, Curitiba city. **Method:** A data collection was performed in the electronic medical record system from January 2016 to December 2018. **Results:** Performed evaluation using NHS scale for about 4867 patients, which 97,74% (n = 4757) services performed by the Unified Health System (SUS). Among the sectors with ambulatory care that performed at the NHS scale, radiotherapy prevailed with 56.09% (n = 2730). Majority of the patients were female 61,8% (n = 3007). Related to the age group, there was a predominance between 60 and 65 years 15.08% (n = 734), followed by the age group of 65 to 70 years 14.07% (n = 685). Regarding obtained Scores within NHS scale application 54,92% (n = 2673), were classified as low risk of fall, 37,59% (n = 1829) were classified as non risk, 5,44% (n = 265) as moderated risk and 2,05% (n = 100) such high risk. **Conclusion:** Based on the data analyzed, it is possible to notice a prevalence of care provided by the SUS, since the institution is a philanthropic institution with the largest public being SUS. It obtained an expressive percentage of elderly between 60 and 70 years, since these carry with them greater comorbidities. Of the patients evaluated by the NHS scale, there is a predominance of those classified as low risk because they were ambulatory patients. Based on the research it is important to make a critical reflection about health services regarding to the prevention and early identification of risk factors of falls.

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ELETRONIC PATIENT REPORT OUTCOMES: A MULTICENTRICAL STUDY OF SYMPTOMS REMOTE HANDLING IN CANCER PATIENTS

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Introduction: The use of digital support technologies for oncological patients through mobile applications has become a trend. In fact, the concept of e-health is already a reality in many hospitals around the world. Based on patient reports, these technologies are becoming highly influential in the care routines against cancer. The nursing care model faces, however, the challenge of adopting and improving the use of these new tools in order to achieve exceptional patient care in this new digital environment. **Objective:** To identify and describe the results acquired through the use of

remote monitoring technologies in cancer patients with an emphasis on reducing number of visits and hospitalizations and also preventing risk situations. **Methods:** 95 patients in outpatient routine for solid cancers and onco-hematologic of multicentric origins in Brazil were part of this research. From these 95, 11 were from private hospitals and 84 from public hospitals and it was considered a three month timeframe. The patients could report sixteen common symptoms through a mobile application, either on their smartphones or tablets. The objective was to monitor and manage symptoms, enabling follow-up with a specialist nurse who would determine the appropriate type of care based on clinical protocols of digital support through an online chat. **Results:** Among the 95 patients, 82 (86.3%) received educational intervention, 11 (13.4%) being from private care and 71 (86.6%) from the public health system. A total of 7 patients (7.3%) were sent to Emergency Care Units after conducting risk stratification and among those 2 patients (18%) were from private hospitals and 5 (6%) from public hospitals. These patients received intervention after reporting severe symptoms during the research. Nurses actions frequently started with clinical actions in response to alerts sent by chat and online clinical management, stratifying the risk by evaluating the intensity of symptoms through the ESASs scale with the classification system of Manchester. This allowed to determine preventive educational conduct, vigilance or risk mitigation. Patients referred were later monitored in the Emergency Care Units and were reassigned to nurses responsible exclusively for emergency assistance. **Conclusions:** Clinical benefits were observed associated to symptom self-reporting routines during cancer treatment through digital support by the specialist nurse.

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IMPLEMENTATION OF A TOOL FOR THE MANAGEMENT OF TOXICITIES OF CANCER TREATMENT

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Introduction: In the oncological scenario, the use of information technology has become a strategic differential in order to optimize the care and management of drug treatment toxicities. One of the most important steps in a decision making process is one in which data are analyzed. At present, uncertainty is pervasive and proper analysis of data is vital for transactional, operational, and business strategy processes. The involvement of research and development specialists, in a multidisciplinary way, is also another factor that strengthens the analysis. **Objective:** To develop a tool that manages oncological toxicities for monitoring by the multidisciplinary team. **Method:** In the present study, a toxicity graduation form was constructed for research purposes regarding the findings. The filling of the form was performed by the nursing team in each care. The form developed in the Smart System as the data capture element and the Elastic (ELK) Stack (Elasticsearch, Logstash and Kibana) as data extraction, treatment, loading and exposure elements (ETL) were used. **Results:** During the period from November / 2018 to May / 2019, data extracted from the toxicity graduation form were compiled. After analyzing and implanting the tool, the scenarios of grades 1 and 2 toxicities, previously not valued by the multidisciplinary team, could be visualized and stratified. There was previously a difficulty in obtaining and analyzing these data. In developing a specific form for collecting toxicity graduation data, a new way of obtaining the data was achieved, with specific moments, through a new culture regarding the data entry, in an objective way and promoting easy retrieval of the records. **Conclusion:** The implementation of the toxicity grading management tool in conjunction with Kibana made it possible to see the panorama of all the graduations of the same. Thus, prevention actions were implemented, thus avoiding unfavorable clinical outcomes and interferences in the patient's quality of life. These new structures of obtaining information together with a new culture regarding the specific moments of data collection through the above mentioned tools, added a significant value in the actions of the multiprofessional team and patient-centered care, observing the care line better.

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PAIN PERCEPTION IN WOMEN WITH GYNECOLOGICAL CANCER IN PELVIC BRACHYTHERAPY

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Introduction: Pelvic brachytherapy used in the treatment of gynecological cancers can cause pain during the procedure. Since 2016, at an oncology institution in the state of Santa Catarina / Brazil, anesthesia has been developed in hysterectomized women (until the beginning of instrument withdrawal), while non-hysterectomized women undergo analgesia or sedation. **Objective:** to evaluate pain intensity in women with gynecological cancer undergoing pelvic brachytherapy. **Method:** cross-sectional, observational study performed at the Centro de Pesquisas Oncológicas, which included a probabilistic sample of 97 women (59 hysterectomized and 38 non-hysterectomized). For data

collection, the last visual brachytherapy session was used to assess the intensity of pain perceived before, during and after the procedure. Data were submitted to frequency measurements. **Results:** it was identified that before the procedure 25 women (25.8%) classified the pain as intense (8-10); 18 (18.6%) moderate pain (5-7); eight (8.2%) mild pain (1-4) and 46 (47.4%) reported no pain. During the procedure, ten (10.3%) classified the pain as intense; eight (8.2%) moderate pain; nine (9.3%) mild pain and 70 (72.2%) reported no pain. After brachytherapy, 18 (18.6%) classified the pain as intense; 34 (35.1%) moderate pain; 21 (21.6%) mild pain and 24 (24.7%) reported no pain. Therefore, 51 women (52%) reported some pain perception before the procedure; 27 (27.8%) for and 73 (75%) after the procedure. Of the 38 women submitted to therapy without anesthesia 27 (71%) reported pain during the procedure. **Conclusion:** Pain was frequent at all stages of the procedure. After brachytherapy, it was observed that pain complaints reached the highest frequencies in the two groups of interest, which shows that the procedure causes pain even in the group undergoing the procedure under sedation. Thus, it is concluded that there is a need for the health team to review anesthetic or analgesic procedures for better control of pain and well-being of patients in the study scenario. Emphasizing that pain is one of the factors that cause more fear and fear, and may interfere with the treatment.

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RELATO DE EXPERIÊNCIA: CRIOTERAPIA CAPILAR E QUIMIOTERAPIA, É POSSÍVEL CONTER A ALOPÉCIA?

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Introdução: Uma das principais toxicidades associadas ao tratamento quimioterápico é a alopecia. Este sintoma gera grande impacto no cotidiano de pacientes, causando estresse e perda da qualidade de vida. As toucas hipotérmicas e os sistemas de resfriamento do couro cabeludo são capacetes que devem ser usados antes, durante e após a infusão da quimioterapia, com o **Objetivo:** de diminuir ou evitar a queda de cabelos a partir da vasocontrição do couro cabeludo. **Objetivo:** Relatar a eficácia e o grau de adesão das pacientes em uso de Crioterapia Capilar submetidas à quimioterapia no Centro de Oncologia do Hospital Moinhos de Vento de Porto Alegre. **Método:** Estudo transversal de caráter descritivo. Foram avaliados pacientes que utilizaram e utilizam o sistema de resfriamento capilar, utilizando o equipamento Paxman® no período de Fevereiro de 2018 à Abril de 2019. As pacientes foram avaliadas a partir da Escala Common Terminology Criteria for Adverse Events (CTCAE) versão 4.0 para determinar o grau de alopécia, sendo grau 0 nenhuma perda, grau 1 perda de até 50% da quantidade inicial de cabelos e grau 2 perda de > 50% da quantidade inicial de cabelos. **Resultados:** Neste período 44 pacientes utilizaram a Crioterapia Capilar. Destas, vinte terminaram o tratamento quimioterápico aliado à crioterapia. Deste grupo, três pacientes apresentaram alopécia grau 0, treze pacientes apresentaram alopécia grau 1 e quatro apresentaram alopécia grau 2. No grupo das pacientes que continuam em tratamento, das dez pacientes, três apresentam grau 0, cinco pacientes apresentam grau 1 e duas pacientes apresentam grau 2 de alopécia. Neste período 14 pacientes desistiram da Crioterapia Capilar. Destas, sete pacientes apontaram como motivo da desistência a insatisfação, pois apresentaram alopécia grau 2, tendo perdido > 50% da quantidade inicial de cabelos. Além destas, no grupo de desistentes, 5 pacientes apontaram como motivo para descontinuação do tratamento os cuidados exigidos durante o período, uma paciente desistiu por cefaleia pós-crioterapia e uma paciente foi à óbito durante o tratamento. **Conclusões:** Estudos apontam que o sucesso do tratamento consiste na preservação dos cabelos, sendo isso definido como alopécia grau 0 ou 1. De encontro aos estudos, os achados do Centro de Oncologia do Hospital Moinhos de Vento caracterizaram-se por apresentar 77% das pacientes, incluídas na análise, com alopécia grau 0 ou 1, efetivando o sucesso terapêutico do método.

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ASSOCIATION OF GSTP1 AND ABCB1 POLYMORPHISMS WITH TOXICITY FROM FIRST-LINE CHEMOTHERAPY IN OVARIAN CARCINOMA

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Background: The association of genes involved in detoxification and transport of platinum or taxanes with toxicity may impact an individual patients response to first-line chemotherapy for ovarian carcinoma. **Aim:** The aim of this study was to evaluate the association between genetic variation in GSTP1 and ABCB1 and toxicities in women with ovarian carcinoma. **Methods:** A cohort of 85 women with a confirmed histological diagnosis of ovarian carcinoma were prospectively recruited between January 2014 and April 2018. Polymorphisms in ABCB1 (rs1128503, c.1236C > T; rs1045642, c.3435C > T) and GSTP1 (rs1695, c.313A > G) were detected by real-time PCR and GSTM1 and GSTT1 were analyzed by the multiplex PCR and genetic deletions. The association between SNPs/deletions and toxicity (hematologic toxicities, nephrotoxicity and neurotoxicity) were evaluated by Fisher's exact probability or Chi-square tests. Variants with $p < .05$ were included in logistic regression with clinical covariates. This study was approved by the local institutional ethics committee (CAAE: 578293.1.0000.5404). **Results:** Carriers of the ABCB1 c.3435C > T variant had increased risk of grade 3 and 4 anemia compared to non-carriers (OR 9.15, 95% confidence interval [CI]: 1.07-78.5, $p = 0.043$). In contrast, women heterozygous or homozygous for the GSTP1 c.313A > G variant had reduced risk of grade 3 and 4 anemia (OR 0.25, 95% CI: 0.69-0.921, $p = 0.037$). Carriers of the ABCB1 c.1236C > T polymorphism had increased risk of grade 2 and 3 neurotoxicity (OR 4.15, 95% CI: 1.33-12.95, c0.014). **Conclusions:** Polymorphisms in ABCB1 are associated with increased risk of developing anemia and neurotoxicity, possibly related to the role of the ABCB1 gene product P-glycoprotein in paclitaxel disposition. The GSTP1 c.313A > G variant could lead to reduced carboplatin exposure, which might decrease the risk of developing anemia in women with this polymorphism. Support: São Paulo Research Foundation (FAPESP) (no: 2016/22335-2) for funding for the conduction of the research.

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EVALUATION OF THE EFFECTIVENESS OF THE INVENTORY MANAGEMENT TOOLS IN AN ONCOLOGY CLINIC IN SALVADOR

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Introduction: In the dynamic scenario of economic change, inventory management is a challenge for healthcare institutions. The development of a supply politic to guide acquisition planning is essential for the efficient delivery of pharmaceutical services. Inventory management tools aim to avoid imbalances in the level of storage and consumption. In an oncology institution, an acquisition plan was adopted based on the ABC curve, it's criticality and specific characteristics of consumption and resupply of each item that compose the current standardization, as well as periodic inventories to ensure high inventory accuracy. **Objective:** To evaluate the effectiveness of acquisition planning tools through stock rotation data and inventory day coverage. **Methods:** A Retrospective study that evaluated the effectiveness of inventory management tools from January 2018 to December 2018 based on the evaluation of the results of the institution's strategic indicators. The indicators evaluated were: Inventory Turnover (aim > 1,80) and stock coverage (aim < 15 days). **Results:** The target for the "Stock Coverage" indicator was reached during the year (Except for the months of March, April, and December). In the case of the "Stock Turnover" indicator, only in the months of April and December, the target was not reached. **Conclusion:** The inventory management tools demonstrated effectiveness in the year 2018, since in the months that the goals were not reached (in both indicators), it was because of the need to adapt the internal planning of purchases with the closing periods of the suppliers (manufacturing laboratories), previously informed, avoiding possible product shortages and supply chain break. The pharmacist's technical knowledge in line with proper inventory management is critical to patient safety and financial sustainability of the institution.

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INFLUENCE OF INHIBITORS AND INDUCERS OF CYTOCHROME P450 ENZYME COMPLEXES ON LEVELS OF ACTIVE METABOLITES OF TAMOXIFEN IN BREAST CANCER PATIENTS

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Tamoxifen is a prodrug that, since the 1970s, has been used as adjuvant and metastatic treatment for patients with hormone receptor-positive breast cancer. This endocrine therapy reduces recurrence rates and mortality, being one of the main options for pre and post-menopausal women, but whose efficacy may be affected by the use of inhibitors or inducers of cytochrome P450. The main objective of this study was to evaluate whether the use of inhibitors or inducers of cytochrome P450 CYPS (except CYP2D6) affected the plasma concentration of the active metabolites of tamoxifen. Through a questionnaire applied during the pharmacotherapeutic follow-up in the first 3, 6 and 12 months of treatment of women with breast cancer, the use of concomitant tamoxifen drugs was evaluated. These drugs were classified as inhibitors or inducers of the CYP2C9, CYP2C19 and CYP3A4/5 enzyme complex. CYP2D6 inhibitors and inducers have not been evaluated since their prescription in the service is discouraged for patients taking tamoxifen. Plasma levels of (Z)-endoxifen and (Z)-4-OH-tamoxifen active metabolites were determined by mass spectrometry at 3, 6 and 12 months of treatment. The project was approved by the local research ethics committee. A total of 117 patients were evaluated and were taking 98 different medications concomitantly to tamoxifen, of which 41 had activity in one or more CYPs. The most commonly used drugs were antihypertensives (31.3%), analgesics (13.7%) and antidepressants (7.1%). CYP2C9 inhibitors influenced plasma levels of (Z)-endoxifen and (Z)-4-OH-tamoxifen in the third month of treatment, with a reduction in plasma levels of 37.1% (p = 0.007) and 26.2% (p = 0.016) respectively. CYP3A4/5 inducers also influenced plasma levels of (Z)-endoxifen, which decreased 58.1% (p = 0.042) at month 12. Despite the controlled prescription of CYP2D6 inhibitors, tamoxifen metabolism may be affected by others P450 modulators. The use of CYP2C9 inhibitors and CYP3A4/5 inducers affected plasma levels of both active metabolites of tamoxifen, emphasizing the importance of monitoring pharmacotherapy and the need to supervision of the hormonal treatment.

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MICROBIOLOGICAL CONTROL FOLLOW UP OF MANIPULATORS GLOVES AND CRITICAL AREAS INVOLVED IN ONCOLOGICAL MEDICINES HANDLING

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Introduction: Despite of oncological production areas qualification and process validation, the risk of contamination by microorganisms do exist. Thus, increasingly, antineoplastic manipulation centers have monitored their manipulators and critical areas by performing microbiological tests. **Objective:** To create a history of microbiological analyzes results and, based on that, to take preventive and corrective actions to eliminate possible contamination risks. **Method:** In a private oncology clinic, microbiological results from 2018 and 2019 were monthly performed and compared to official compendia. Samples were collected by surface contact of Rodac and Petri plates from the Biological Safety Cabinet (BSC), manipulation rooms stand surface, passthrough surface and nurses and pharmacists gloves. All samples were sent to a REBLAS accredited lab for microbiological analyzes, including count of bacterial and fungal colonizing units. **Results:** After the historical results obtained through analyzes carried out in 2018, measures were taken to optimize these values in 2019, according to United States Pharmacopeia (USP) recommendations. Theses measures include hygiene employees training, asseptic techniques validation and constant training for all team involved with this process. Thus, the means of the results obtained for Bacterial Colony Forming Units (CFU B) and Fungal Colony Forming Units (CFU F) (2018 and 2019) and USP were, respectively: - Nurses Gloves (CFU B): 0.2, 0.7, 3.0. - Phamacists Gloves (CFU B): 1.8, 0.8, 3.0. - Passthrough surface (CFU B): 14.4, 5.2, 25 and (CFU F): 5.5, 3.5, 25 (considering the same recommend values for manipulation room). - Manipulation Room (CFU B): 9.8, 2.8, 25 and (CFU F): 1.0, 2.0, 25. - BSC surface (CFU B): 1.3, 0.3 3.0 and (CFU F): 0.5, 0.4, 3.0. Although all values were within normal range, there was a reduction in CFU B and CFU F values from 2018 to 2019, except for nurses gloves, wich, however, remained within USP recommendations. **Conclusion:** Microbiological control follow up was essential for preventive and corrective measures to be taken. Thus, processes training, asseptic techniques validation and hygiene of both hands and critical areas were essential measures to avoid contamination risks and to increase safety and efficiency of oncology medicines handling.

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CONSOLIDATION OF A NUTRITIONAL ASSESSMENT PROTOCOL IN CHEMOTHERAPY PATIENTS IN A PRIVATE CLINIC IN BRASILIA

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Introduction: The nutritional aspect is essential in cancer patient care. Studies show that the incidence of malnutrition in cancer ranges from 40% to 80%. Its negative effects are related to poor prognosis and worsening of quality of life (QOL), and treatment interruption may be necessary. The Patient Generated Subjective Global Assessment (PG-SGA) is the gold-standard instrument for nutritional assessment of cancer patients. In Brazil, there is still no validated protocol for nutritional monitoring of these patients. **Objective:** To consolidate the Nutritional Support Program (NSP) developed for the routine care of patients in outpatient chemotherapy. **Method:** Cross-sectional and descriptive study. The data were collected from a nutritional evaluation performed by the PG-SGA at three times of the chemotherapy protocol: beginning (T1), medium (T2) and end (T3). The period of data collection was two years. After evaluation with the PG-SGA, the patients were followed up by a specialist nutritionist on an outpatient basis (at nutritional risk: PG-SGA > 4) or during rounds (without nutritional risk: PG-SGA < 3). Data were analyzed using descriptive statistics. **Results:** The population was composed of 209 patients, mostly female (67%), with a mean age of 59 years. The main oncological diagnoses were breast (27%), gastrointestinal (23%), gynecological (14%), lymphoma (18%), myeloma (6%), head and neck (6%), lung (6%), genitourinary (5%), leukemia (2%) and others (3%). In T1, 51% of the patients were at nutritional risk (PG-SGA > 4), decreased in T2 to 46% and maintained a decrease in T3 to 32%. Analyzing separately the patients with a critical need for intervention (PG-SGA > 9), a reduction of 22% to 14% was observed until the end of the treatment. Finally, there was a 48% improvement from T1 to T2, 49% from T2 to T3 and from 53% from T1 to T3, which also signals the effectiveness of strategies used by NSP. **Conclusion:** The benefits of follow-up in nutritional performance are observed from routine systematization with screening during chemotherapy. NSP facilitated early care, which suggests the reduction of complications and improvements in the general state of the patient. Longitudinal studies are necessary to relate NSP data and variables such as QOL and distress.

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DOSE REDUCTION, RELATIVE DOSE INTENSITY AND TREATMENT TOXICITY IN CERVICAL CANCER PATIENTS UNDER CISPLATIN AND RADIOTHERAPY TREATMENT

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Introduction: Studies show that obese patients tend to be submitted to empiric chemotherapy dose reduction, aiming to attenuate adverse effects of the treatment. However, findings suggest that this practice is possibly related to worse clinical outcomes and there is no evidence of severe toxicity with full dose administration in this population. **Objective:** To describe the relationship between body mass index (BMI) with capping dose, relative dose intensity (RDI) and treatment toxicity in cervical cancer patients. **Method:** The sample consisted of 183 cervical cancer patients, older than 18 years, admitted at Cancer Hospital II (INCA) between 2018 and 2019, without previous treatment, with proposal of cisplatin and radiotherapy combined treatment. Sociodemographic, clinical and BMI data were assessed at the first chemotherapy cycle. Chemotherapy toxicity was evaluated as the presence of symptoms ≥ grade 3, according to Common Terminology Criteria for Adverse Events v4.0. Severe toxicity was considered as any adverse event resulting in interruption, delay or dose reduction (> 15%). Capped dose was analyzed based on the institutional protocol (70mg/week) and RDI was calculated using the formula: (delivered dose/treatment duration) ÷ (prescribed dose/planned treatment duration). The analyses were considered statistically significant if *p-val*ue < 0,05. **Results:** The mean age of the patients was 47 years (± 12,6 years). Of total, 87,4% showed squamous cell carcinoma histological type and 43,7% had cancer stage II. Excess of weight was found in 61,8% (33,9% overweight and 27,9% obesity). Regarding treatment, capped dose was identified in 42,6%, toxicity ≥ 3 in 59% and severe toxicity in 24,6%. Over 90% of the obese patients had capped dose, and the prevalence of toxicity was similar among BMI ranges, regardless the capped dose (89,3% vs. 91,3% for obesity and 44,4% vs. 42,3% for overweight). In addition, 6% of the patients received less than 85% of the prescribed dose, of which all were obese. All analyzes were statistically significant. **Conclusion:** Given the high prevalence of excess weight, and since toxicity frequencies were similar between BMI ranges, regardless the capped dose in the studied population, it is suggested further studies evaluating the evidence of empiric dose reduction in these patients aiming to avoid treatment toxicity. Also, the impact of capped dose on cervical cancer prognosis should be investigated in the future.

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ASSOCIATION OF POLYMORPHISM IN THE ABCC2 GENE WITH RESPONSE TO IMATINIB-BASED THERAPY IN PATIENTS WITH CHRONIC MYELOID LEUKEMIA IN NORTHERN REGION OF BRAZIL

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Introduction: Chronic myeloid leukemia (CML) is the excessive proliferation of granulocytic lineage cells of hematopoietic system, its main characteristic is the Philadelphia chromosome, which consists of the translocation of chromosomes 9 and 22, resulting in the expression of BCR- ABL with unregulated tyrosine kinase enzymatic activity. The CML main treatment is imatinib (IMB), a selective tyrosine kinase inhibitor. However, literature reports a failure of therapeutic response in 25% of patients during the treatment of CML, which may be associated with individual genetic variability. ABC family genes encode carrier proteins that mediate the transport of substances into cells, including drugs. Genetic polymorphisms that modify the functionality of proteins encoded by these genes are related to the resistance of various drugs used in clinical practice. So, investigating polymorphism in these gene may help elucidate the therapeutic failure of IMB. **Objective:** To analyze the rs717620 polymorphism in the ABCC2 gene as a possible marker of response to imatinib mesylate. **Methodology:** The study population consisted of 105 patients with CML treated with IMB at a reference hospital in oncology in Pará. Polymorphism genotyping was performed by real-time PCR using QuantStudio 12K Flex Real-Time PCR System (Applied Biosystems®, Foster City, California, USA). A panel of 61 Ancestral Information Markers was used for genomic control. Statistical analyzes were performed in the SPSS 23.0 program. **Results:** The results indicated that 7% of patients did not respond to the treatment. There was no statistical significance between the rs717620 polymorphism studied and the response to CML treatment (p = 0,187, OR = 1,103, CI = 1,026-1,186). Although our result, another studies found out that ABCC2 gene was associated with imatinib resistance and had a combined influence on both elimination and distribution of methotrexate, also a treatment to leukemias. These result vary according to the population studied and as ours is a very genetically different population, our research may have a great impact on literature. **Conclusion:** In conclusion, our data showed that the polymorphism studied in the ABCC2 gene is not statistically significant.

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FOLATE PATHWAY GENES ASSOCIATION AS A GENETIC RISK FACTOR FOR DEATHS IN CHILDREN WITH ACUTE LYMPHOBLASTIC LEUKEMIA PATIENTS FROM AN ADMIXED POPULATION IN THE BRAZILIAN AMAZON

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Acute lymphoblastic leukemia (ALL) is the most common childhood cancer, a representing for approximately 30% of all pediatric cancers. Advances in the chemotherapy of childhood ALL, based on a cocktail of chemotherapy drugs, have resulted in survival rates of > 80%. Despite the clinical success of this treatment, around 20% of the children present serious toxicological complications and relapses, which confirms the fact that ALL is still one of the main causes of pediatric death. Polymorphisms in genes involved in folate biosynthesis have been proposed to increase the risk of relapses and toxicities in the treatment of childhood ALL. The objective of the study was to evaluate the role of seven polymorphisms in folate pathway genes as prognostic markers of death in children with ALL of a miscegenated population from the Brazilian Amazon region. The study included 138 patients diagnosed with ALL. The treatment of the patients was based on the protocol ALL IC-BFM 2002. The polymorphisms investigated included: rs2236225 (MTHFD1 G > A), rs1801133 (MTHFR G > A), rs1801394 (MTRR A > G), rs11545078 (GGH G > A), rs1800909 (GGH A > G), rs3758149 (GGH G > A) and rs1979277 (SHMT1 G > A). The samples were genotyped using a QuantStudio 12K Flex RealTime PCR System. The influence of the genetic variants on the risk of death was evaluated by the applying a multivariate logistic regression, which included age, sex and genetic ancestry to control for confounding effects. All statistical tests were considered significant at $p \leq 0.05$. The analyzes were run in the SPSS program v.25.0. 42 (30. 4%) of the investigated patients died during ALL treatment. Most deaths occurred during the consolidation or maintenance phases of treatment (88%). The causes of death involved disease progression due to relapse (n = 29. 69% of patients) and toxicities (n = 13. 31% of the patients, the most frequent were haematological, 61. 5% and infectious, 30.7 %). The analyzes showed a significant association of rs11545078 G > A polymorphism of the GGH gene with the risk of death. Homozygous AA patients had a three-fold increased risk of death during treatment (OR:

3.193; 95% CI: 0.840-12.135; P: 0.042). No significant associations in the polymorphisms investigated with the risk of death during the treatment of the disease were found. Our study demonstrates the role of homozygosity of rs11545078 G > A polymorphism of the GGH gene as a risk factor for death in children treated for ALL in the investigated sample.

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GENETIC VARIABILITY IN DISTINCT CISPLATIN AND RADIOTHERAPY METABOLIC PATHWAYS AND PROGNOSIS OF HEAD AND NECK SQUAMOUS CELL CARCINOMA PATIENTS

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Introduction: Locally advanced head and neck squamous cell carcinoma (HNSCC) patients have been treated with cisplatin (CDDP) associated with radiotherapy (RT). The sensitivity and toxicity to CDDP and RT have been associated with single nucleotide polymorphisms (SNPs) in genes that operate in distinct metabolic pathways. **Objective:** This prospective study aimed to investigate the roles of GSTM1, GSTT1, GSTP1 c.313A > G (rs1695), XPC c.2815A > C (rs2228001), XPD c.934G > A and c.2251A > C (rs1799793 and rs13181), XPF c.2505T > C (rs1799801), ERCC1 c.354C > T (rs11615), MLH1 c.-93G > A (rs1800734), MSH2 c.211+9C > G (rs2303426), MSH3 c. c.3133G > A (rs26279), EXO1 c.1762G > A (rs1047840), TP53 c.215G > C (rs1042522), CASP3 c.-1191A > G and c.-182-247G > T (rs12108497 and rs4647601), FAS c.-1378G > A and c.-671A > G (rs2234767 and rs1800682) and FASL c.-844C > T (rs763110) SNPs genotypes, enrolled in CDDP and RT metabolism, in prognosis of 109 HNSCC patients treated with CDDP and RT. **Methods:** Genotypes were analyzed in genomic DNA by polymerase chain reaction based methods. Event-free survival (EFS) and overall survival (OS) were estimated by the Kaplan-Meier method, log-rank test and Cox hazards models. **Results:** At 24-months of follow-up, the EFS and OS were shorter in patients with GSTM1 null plus FAS GG (30.0% vs. 52.1%, *P* = 0.01; 30.0% vs. 57.9%, *P* = 0.03), GSTP1 AA plus ERCC1 CC (23.1% vs. 41.6%, *P* = 0.02; 30.8% vs. 49.6%, *P* = 0.008), XPD AC or CC plus FAS GG (29.1% vs. 50.6%, *P* = 0.003; 28.9% vs. 55.3%, *P* = 0.02), MSH2 CC or CG plus FAS GG (24.1% vs. 36.8%, *P* = 0.03; 23.9% vs. 45.9%, *P* = 0.02) and FAS GG plus FASL CC (12.5% vs. 36.6%, *P* = 0.01; 12.5% vs. 47.0%, *P* = 0.001) SNPs genotypes, respectively. The patients with GSTM1 null plus FAS GG, GSTP1 AA plus ERCC1 CC, XPD AC or CC plus FAS GG, MSH2 CC or CG plus FAS GG and FAS GG plus FASL CC SNPs genotypes had 2.55, 2.32, 2.89, 4.26 and 3.22 more risks of progression, relapse or death by disease, and 2.42, 2.49, 2.17, 4.52 and 4.69 more risks of evolving to death, respectively. **Conclusion:** Our data present, for the first time, preliminary evidence that combined inherited abnormalities in intracellular detoxification, DNA repair and apoptosis of damage cells modulate prognosis of HNSCC patients treated with CDDP and RT. **Financial support:** FAPESP and CAPES.

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IDENTIFICATION OF DNA REPAIR SYSTEMS IMBALANCES AND ITS ASSOCIATION WITH CLINICAL ASPECTS OF COLORECTAL LIVER METASTASIS

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Background: Approximately 50% of patients with colorectal cancer will develop distant metastasis, and liver is the main site to harbor neoplastic disease spread. Additionally, colorectal liver metastases (CLM) are the main cause of death in these patients. DNA repair systems imbalances may influence tumor aggressiveness and response to chemotherapy. However, the role of these pathways on colorectal metastatic progression in the liver has not yet been elucidated. Thus, this study aimed to identify alterations in the key components of two DNA repair pathways, named base excision (BER) and double breaks (DSBR)

repair and its association with clinicopathological features of tumor aggressiveness in CLM patients. Patients and **Methods:** We prospectively evaluated 50 patients who underwent hepatectomy due to CLM. Fresh and FFPE matched neoplastic and healthy liver tissues were evaluated for gene expression of OGG1, POLB, PARP1, XRCC1, RAD51, BRCA1 and Ku80 (qRT-PCR). Gene expression presented as Fold Change (FC) Log2 (neoplastic/healthy tissue). Molecular data was associated with clinicopathological variables. Univariate and multivariate analyzes were performed considering $P < 0.05$. **Results:** BER pathway presented imbalance due to reduction of PARP1 expression (FC = - 3.10; $P < 0.001$) and XRCC1 overexpression (FC = 2.47; $P < 0.05$). OGG1 and POLB did not present alterations. As regards the DSBR pathway, RAD51 and BRCA1 presented reverse modulation (FC = 4.02, $P < 0.001$ and FC = - 4.73, $P < 0.001$), while Ku80 presented a reduction in their levels (FC = - 2, 80, $P < 0.05$). Higher levels of XRCC1 and OGG1 were associated with more advanced primary stage and metachronous metastasis, left-sided colorectal tumors and shorter interval until metastatic progression. Lower levels of Ku80 and BRCA1 were associated with occurrence of smaller metastatic lesions, but higher number of involved segments, respectively. **Conclusions:** The results suggest a profile of increased tumor aggressiveness associated to the reduction of signaling and processing of simple and double strand breaks. BER and DSBR imbalances opens a new field for the study of possible biomarkers in CLM subtypes identification, with potential to improve therapeutic decision making and clinical outcomes.

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INVESTIGATION OF SNP-LIKE POLYMORPHISMS AT THE MIR-200C BINDING SITE (RS12904) AND AT THE PRECURSOR OF MIR-196A2 (RS11614913) IN GASTRIC CANCER PATIENTS FROM THE NORTHERN REGION OF BRAZIL

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Introduction: In the Northern region of Brazil, gastric cancer (GC) is the second most frequent type of cancer in men and fifth in women. The microRNA (miRNA) is a small non-coding RNA whose function is to regulate gene expression through the degradation of messenger RNA. miRNAs are estimated to be involved in the regulation of oncogene and tumor suppressor genes activities. Among the miRNAs most associated with GC susceptibility are miR-200c and miR-196a2. **Objective:** The aim of this study is to describe the frequency of polymorphisms at miR-200c binding site (rs12904) and miR-196a2 gene precursor (rs11614913), related to gastric cancer susceptibility, in a sample of patients with GC from the Northern region of Brazil. **Methods:** The present study selected a sample of 190 CG patients treated in centers of reference in oncology in the Northern region of Brazil. The genetic material was extracted from peripheral blood using the commercial BiopurKit Mini Spin Plus-250 DNA extraction kit (Biopur, Brazil). Concentration and purity of the DNA were measured with the NanoDrop 1000 Spectrophotometer (Termo Fisher Scientific, Wilmington, DE). The analysis of genotyping of single nucleotide polymorphisms (SNP) was performed by allelic discrimination using TaqMan OpenArray Genotyping technology in the QuantStudio 12K Flex Real Time PCR System (Applied Biosystems, Life Technologies, Carlsbad, USA). The statistical analysis were performed using the statistical program R. Differences among CG patients regarding age and gender were estimated using the T-test of Student and the Hardy-Weinberg equilibrium deviation was performed using the Pearson Chi-square test. **Results:** When analyzing miR-200c (rs12904), the mutant A allele frequency is high (52%), and most individuals are heterozygous (51%). Regarding the rs11614913 miR-196a2 polymorphism, the C allele is more prevalent (76%) and most individuals are homozygous CC (58.2%). In the literature, it has been reported that these genotypes are more prevalent in CG patients and the presence of the allele A for rs12904 and the C allele for rs11614913 were related to the increased risk of developing the disease. **Conclusion:** These results are in agreement with the literature, suggesting that these polymorphisms may be important in studies related to gastric carcinogenesis in this population. However, further studies are needed to confirm these polymorphisms as possible biomarkers of GC susceptibility.

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INVESTIGATION OF SNP-LIKE POLYMORPHISMS AT THE MIR-570 BINDING SITE (RS4143815) AND THE MIR-146A PRECURSOR GENE (RS2910164) IN GAS-

TRIC CANCER PATIENTS FROM NORTHERN BRAZIL

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Gastric cancer (GC) is one of the most incident types of neoplasia in Brazil, especially in the northern region. miRNAs are important epigenetic agents responsible for regulating gene expression. One of the molecular changes involving miRNAs associated with GC susceptibility includes the miR-570 (rs4143815) and the miR-146a (rs2910164). The somatic mutation rs4143815 at the miR-570 (G > C) binding site is responsible for the overexpression of PDL-1. Whereas the rs2910164 polymorphism in the precursor gene of miR-146a (G > C) promotes the inhibition of proinflammatory factors, such as IL-1, IRAK1, TNF, TRAF6. The objective of this study is to describe the frequency of polymorphisms at the miR-570 binding site (rs4143815) and the miR-146a precursor gene (rs2910164) related to gastric cancer susceptibility in a sample of GC patients from the Northern Brazil. The study was performed with 190 individuals diagnosed with gastric adenocarcinoma attended at Ophir Loyola Hospital and João de Barros Barreto Hospital located in Belém, state of Pará. The SNPs genotyping was performed by allelic discrimination using TaqMan OpenArray Genotyping technology in the QuantStudio 12K Flex Real-Time PCR System and statistical analyzes using the statistical program R. For both polymorphisms (rs4143815 and rs2910164), we could observe a higher frequency of the wild allele (G) with 65% and a predominance of the heterozygous genotype (CG) with approximately 55% of the total sample. The Hardy-Weinberg Equilibrium test demonstrate a p = 0.465 for the rs4143815 (miR-570) polymorphism and a p = 0.01 for the rs2910164 (miR-146a). Patients with gastric cancer from Northern Brazil show a predominantly heretozygous genetic profile (CG) for both SNPs investigated.

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THE CHALLENGES OF VALIDATING A NGS PANEL FOR TUMOR MUTATIONAL BURDEN (TMB) ASSESSMENT IN ROUTINE DIAGNOSTICS

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Background: Tumor Mutational Burden (TMB) has been recently discovered as an important quantitative biomarker for predicting response for cancer immunotherapies. High TMB is associated with increased neoantigens and better response to immune checkpoint inhibitors. TMB is an emerging biomarker that requires standardization for clinical use; however, its implementation is still a challenge given several preanalytical, analytical and postanalytical caveats. **Objective:** Our goal was measuring TMB using a large gene-targeted sequencing panel (NGS) for routine diagnostics implementation. **Methods:** TMB assessment was performed by Thermo Fishers Oncomine Tumor Mutation Load Assay (OTML). Pilot One Experiment was performed to identify optimal DNA extraction method using manual (Thermo Fisher) and/or automated (QIAGEN) DNA isolation protocols. After DNA extraction choice, Pilot Two Experiment was performed to evaluate UDG treatment and TMB performance. All statistical analyses were performed with GraphPad Prism v.8 by using paired or unpaired t-test where appropriate. Variances and normality were tested with F test and Shapiro-Wilk test, respectively. Differences were considered to be significant when $p < 0.05$. **Results and Discussion:** Automatic and manual methods yielded differently but no significant variation was observed (p = 0.052). OTML libraries also showed no significant variation regardless of extraction method (p = 0.222) and UDG treatment (p = 0.625). A high baseline noise was observed in four samples due to high cytosine deamination (C:G > T:A), leading to TMB overestimation (> 2,000). UDG treatment reduced deamination-induced nucleotide changes, reinforcing that uracil lesions are a major source of artifactual C > T variants in FFPE DNA. Bioinformatics-adjusted parameters also reduced TMB for samples with high deamination rate. Nevertheless, TMB remained overrated for three samples, indicating that a reliable sample QC should be performed. **Conclusions and Perspectives:** Manual and automatic extraction methods showed similar results; however automated DNA isolation is advantageous for high-throughput laboratories, reducing hands-on time. Preanalytical factors had a strong influence for TMB assessment. UDG treatment and bioinformatics pipeline validation should be performed to minimize FFPE artifacts. A reliable sample QC checkpoint seems to be a crucial step prior to TMB analysis.

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THE IMPORTANCE OF THE EXPANDED HEREDITARY CANCER PANEL IN THE CURRENT HEALTH SCENARIO: A MORE RESPONSIVE AND LESS EXPENSIVE WAY TO INVESTIGATE HEREDITARY CANCER

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Cancer is becoming a major problem in the health and economic sector of the world. According to WHO, in 2010, there was an annual expenditure of US$ 1.16 trillion on cancer. One of the strategies to reduce this cost is prevention through the early detection of cancer or risk factors, like the genetic investigation of variants that define the diagnosis of hereditary cancer syndromes. In order to understand which genetic test would be better, a small panel or a broader panel, the objective of the present study was to analyze data from the broader panel developed by Hermes Pardini laboratory and the hypothesis if they had been run on smaller panels to see how conclusive the larger panel is. This panel was customized by the laboratory itself and analyzes 40 genes related to hereditary cancers (APC, ATM, BAP1, BARD1, BLM, BMPR1A, BRCA1, BRCA2, BRIP1, CDH1, CDK4, CDKN2A, CHEK2, EPCAM, FANCC, GREM1, MEN1, MET, MLH1, MRE11A, MSH2, MSH6, MUTYH, NBN, NF1, PALB2, PALLD, PMS2, POLD1, POLE, PTCH1, PTEN, RAD50, RAD51C, RECQL, RET, SMAD4, STK11, TP53, VHL). A total of 420 exams were performed, where 350 presented genetic variants to be analyzed, of which 76% were clinically relevant. Pathogenic and likely pathogenic variants, which lead to a differentiated clinical course, accounted for 17% of the cases. Usually the main syndromes investigated by this panel are hereditary breast and/or ovary cancer (BRCA1 and BRCA2 genes) and Lynch syndrome (MSH6, MSH2, MLH1 and PMS2 genes). If the patients performed the analysis only for BRCA1 and BRCA2 instead of making the 40 genes panel, only 26% would have a diagnostic conclusion and 74% would be led to a new genetic test. If patients had taken only the Lynch exam, just 12% would complete the diagnosis. And then, considering the genes analyzed in the panel of 16 genes, ATM, BRCA1, BRCA2, BRIP1, CDH1, CHEK2, MLH1, MSH2, MSH6, PALB2, PMS2, PTEN, RAD51C, RAD51D, STK11 e TP53 (Rol de Procedimentos e Evento em Saúde, 2018), it was verified that 20% of these variants pathogenic or likely pathogenic would not be identified. The negative results would lead to a new genetic research, increasing the cost for the plans or patients and the time of genetic diagnosis. From these data, we conclude that the 40 genes panel could be a more responsive and less expensive way for investigation of hereditary cancer in this change of scenery in the world health that predicts for 2025 about 22 million new cases of cancer, whose 10-15% is hereditary.

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THE ROLE OF PRECISION MEDICINE IN THE OPTIMIZATION OF THE SYSTEMIC TREATMENT FOR ADVANCED NEOPLASMS

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Introduction: Next Generation Sequence (NGS) is an interesting platform which can help clinicians to choose wisely the best treatment for cancer patients according to the presented "drugable mutations." **Objectives:** our primary end-point was to analyze the use of NGS tool (Foundation One CDX) to choose the best systemic treatment for advanced cancer patients; our secondary end-point was to understand whether or not Foundation One CDx can change the practice outcomes when compared to standard guidelines approaches. **Methods:** we analyze retrospectively our patients cohort whom were submitted to the Foundation One CDx test. All issues were carried out according to the good clinical practice guidelines. Statistical analysis was performed using SPSS version 22.0, Chicago, ILL, USA. **Results:** The performed assay interrogated 324 genes as well as introns of 36 genes involved in rearrangements. The assay was updated periodically to be reflected new knowledge about cancer biology. Microsatellite status was stable and tumor mutational burden was low and intermediate in our analyzed patients with vagina squamous cell carcinoma and glioblastoma. The main genomic findings were CCND1 amplification FGFR1 amplification, MYC amplification - equivocal, C11orf30 (EMSY) amplification, FGF19 amplification, FGF3 amplification, FGF4 amplification, MLL2 splice site 15784+1G > C, Q364, NSD3 (WHSC1L1) amplification, TERC amplification, TP53 P278S, EGFR amplification, EGFRvIII, TSC1 rearrangement exon

6, CDKN2A/B loss, DIS3 D238N, TERT promoter -146C > T. Therapies findings with clinical benefits were Abemaciclib, Palbociclib, Ribociclib, Pazopanib, Ponatinib for vagina squamous cell carcinoma; and Afatinib, Cetuximab, Dacomitinib, Erlotinib, Gefitinib, Lapatinib, Osimertinib, Panitumumab, Everolimus, Temsirolimus for glioblastoma. **Conclusions:** NGS analysis technique is a useful tool to improve the clinical practice when it is ordered in anticipation for patients with good performance status due to its possibility to provide a broader therapeutically options according to the subjects´ pharmacogenomics.

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THE RS4673993 POLYMORPHISM OF ATIC GENE AS A RISK FACTOR FOR DEVELOPING ACUTE LYMPHOBLASTIC LEUKEMIA

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Introduction: Acute Lymphoblastic Leukemia (ALL) is a malignant transformation and proliferation of lymphoid progenitor cells in the bone marrow, blood and extramedullary sites and is the most common cancer diagnosed in children, represents approximately 25% of cancer diagnoses among children younger than 15 years. ALL is one of the principal causes of cancer deaths in children around the world. The etiology is still poorly understood, although studies have shown that it may be provoked by a combination of environmental exposure and genetic susceptibility. Recent studies have found single nucleotide polymorphisms in different genes that were related to the risk of developing ALL, specifically, the B cell lineage of the leukemia (B-cell ALL). The ATIC gene codifies a bifuncional protein (5-aminoimidazole-4-carboxamide ribonucleotide formyltransferase and IMP cyclohydrolase) that catalyzes the last two stages of the synthesis of Inosine monophosphate. The rs4673993 variant of the ATIC gene has been widely shown to be associated with toxicity to treatment with methotrexate, an inhibitor of the folate pathway. **Objective:** In this way the aim of this study was to report the role of the rs4673993 variant of the ATIC gene as a risk factor for ALL in a population of the Brazilian Amazon region. **Methods:** Genotyping of rs4673993 was performed using TaqMan OpenArray Genotyping technology in the QuantStudio 12K Flex Real-Time PCR System in 121 patients with B-cell ALL diagnosed at two public hospitals in the city of Belém, Pará (Brazil). The patients were diagnosed between 2006 and 2016, based on the criteria of the French-American-British (FAB) classification systems. The immunophenotyping was determined by flow cytometry. The control group was composed of 155 unrelated individuals from the same socio-economic level and geographic area as the members of the case group. All statistical analyzes were performed in program R v.3.4.0. The value of P was considered significant when less than 0.05. **Results:** The homozygous mutant genotype (CC) of the rs4673993 variant of the ATIC gene was associated with a 360% increase in the risk of developing ALL in the study population (OR = 3.594; 95% CI = 1.5098.518; *P* = 0.004). **Conclusion:** The study indicates that the variant analyzed plays an important role in the risk to developing ALL. This is the first study to show the influence of this polymorphism in the development of ALL in the population of the Brazilian Amazon region.

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ASSOCIATION BETWEEN NUMBER OF DEATHS BY HODGKIN LYMPHOMA AND SCHOOLING LEVEL IN THE STATE OF RIO DE JANEIRO

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Introduction: Lymphomas are divided into non-Hodgkin's lymphomas and Hodgkin's lymphomas (HL), based on which classical HL (95% of cases) is characterized based on histopathology through Reed-Sternberg cells. Hodgkin's lymphomas survival depends of factors such as age, stage, histological subtype. Overall curability reaches 85%. Due to advances in therapeutics, mortality has been reduced by more than 60% since the early 1970s. In order to evaluate if the measure of reduction in mortality is homogeneously declining in all social spheres we used schooling level as a marker. Low level of schooling is one of the main markers of social vulnerability. Studies evaluating these variables were not found in the literature. OBJECTIVE To trace the death number by Hodkin's Lymphoma in people with different levels of schooling in the State of Rio de Janeiro from 2008 to 2017. **Method:** This is a descriptive epidemiological study, whose data were obtained by consulting the Mortality Information System database, made available by the DATASUS. The study population consisted of all cases of death due to Hodkin's disease registered in the period from 2008 to 2017 in the state of Rio de Janeiro. **Results:** A total of 315 cases of Hodkin's lymphoma death were recorded

in the state of Rio de Janeiro from 2012 to 2017. When the population group with education up to 3 years was evaluated: in the period from 2013 to 2017 there were more 12.8% cases of death than in the previous five years. Among those who studied between 4 and 7 years: an increase of 1.7% when compared to the previous 5 years. In the group that studied from 8 to 11 years: there was an increase of 21.25% in the period from 2013 to 2017 compared to the period from 2008 to 2012. The population group with education above 12 years showed a fall of 14% in cases of death when compared the period from 2013 to 2017 in relation to the period from 2008 to 2012. **Conclusion:** The present study demonstrated that in the State of Rio de Janeiro, when comparing the years 2013 to 2017 to the period from 2008 to 2012, there was an increase in the number of deaths due to Hodkin's Lymphoma in the population group with low educational level. In parallel to this, there was a 14% drop in the number of deaths in the population group with a higher schooling (12 years or more of study). There is a demonstration that the decrease in mortality described in the literature does not include groups in a state of social vulnerability.

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AUTOLOGOUS ANTI-CD19 CHIMERIC ANTIGEN RECEPTOR T-CELLS IMMUNOTHERAPY IN RELAPSED/REFRACTORY ACUTE LYMPHOBLASTIC LEUKEMIA PATIENTS: A SYSTEMATIC REVIEW

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Introduction: Acute Lymphoblastic Leukemia (ALL) is the most prevalent malignant neoplasm in children; but, when it happens in adults, ALL becomes a devastating disease. Although, chemotherapy produces positive results in patients first contact with the disease, the possibility of cure is practically null when ALL becomes relapsed/refractory. **Objective:** To systematically review the anti-tumor efficacy of Anti-CD19 Chimeric Antigen Receptor (CAR) T-Cells Immunotherapy in the treatment of patients diagnosed with relapsed/refractory ALL, as well as to discuss its advantages and disadvantages, according to the current literature. **Methodology:** The study consisted in a systematic review based on analysis of manuscripts retrieved, from 2015 to 2019, in the databases PubMed, Cochrane Libery and LILACS, and also in the journals BLOOD, NATURE, Journal of the American Medical Association (JAMA) and New England Journal of Medicine (NEJM). The searches were made by using the key words: CD19-specific chimeric antigen receptor, relapsed/refractory acute lymphoblastic leukemia and treatment outcome. **Results:** Only 18 (19,15%) of 94 retrieved papers met the inclusion criteria and were selected for the review (which totalized 637 participants). In the responses, 81,47% (95% CI, 80,19% 82,75%) of the patients had a Complete Response; 10,91% (95% CI, 10,23% 11,59%) did not respond to the treatment; the neoplasm relapsed in 28,18% (95% CI 27,63% 28,73%) of the cases; and 12,88% (95% CI, 12,12% 13,63%) of the patients died. The most common side effects found were Cytokine Release Syndrome (CRS) and Neurotoxicity; they occurred, respectively, in 71,11% (95% CI, 70,72% -71,50%) and 26,79% (95% CI, 26,39% 27,19%) of the patients. The average risk of bias of the analyzed studies was considered low. **Conclusion:** Despite the side effects related to CRS and Neurotoxicity, the Anti-CD19 CAR T-Cells Immunotherapy is shown as a promising and highly effective therapy, which is able to generate high rates of Complete Response in the treatment of relapsed/refractory ALL. This legacy starts to consolidate now and reveals new perspectives, so that, in the next years, it becomes possible to benefit from new advances and from increasingly encouraging data.

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CORRELATION BETWEEN THE TELOMER LENGTH AND DRIVER MUTATIONS IN PATIENTS WITH MYELOFIBROSIS

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Introduction: Myelofibrosis (MF) is a myeloproliferative neoplasm characterized by fibrosis of the bone marrow and abnormal expression of cytokines. It is the least prevalent classical Myeloproliferative Neoplasm (MPN), but with the worst prognosis. Characteristics observed in the evolution of the disease are marrow failure, thrombotic and hemorrhagic complications, and transformation to acute leukemia. The driver mutations of the JAK2, MPL and CALR genes explain the mechanism of development of classical MPNs in at least 90% of cases, through the convergence of the activation of the JAK-STAT pathway. Telomeres are repetitive DNA sequences (TTAGGG) that protect the ends of linear chromosomes and maintain genomic stability. The shortening of telomeres is observed in senescence, and can be accelerated in the presence of chronic diseases and inflammatory response. Studies have indicated the reduced size of the telomer in myelofibrosis, suggesting a possible prognostic relevance for this biomarker. **Objectives:** The aim of this study was to investigate the relative telomere length (T / S) in patients with myelofibrosis and its correlation

with the presence of driver mutations. **Methods:** T / S was analyzed in peripheral blood samples from 37 Myelofibrosis-patients and 42 age-matched controls. T / S was determined by quantitative real-time PCR using the 36B4 single copy gene as the normalizer. **Results:** Myelofibrosis-patients had a median age of 59 years and female predominance (63.16%). The median time of MF diagnosis was 10 years. The distribution of driver mutations showed 51.35% of JAK2V617F positive and 48.65% of JAK2V617F negative. The control group had a median age of 59 years and a predominance of females (55%). Significant reduction in relative telomer length was observed among Myelofibrosis-patients compared to the control group ($p < 0.0001$). The T / S of patients with JAK2V617F positive mutation and JAK2V617F negative mutation was significantly reduced when compared to controls ($p < 0.05$). **Conclusion:** Preliminary results from the present study suggest that T / S is reduced in Myelofibrosis-patients regardless of the presence of the JAK2V617F driver mutation.

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EVALUATION OF MORTALITY DUE TO LEUKEMIA IN BRAZIL IN THE LAST 10 YEARS

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Introduction: In general, leukemias can be classified as acute or chronic, depending on the compromised cell line. Environmental exposure factors, genetic abnormalities and familial mutations are well established risk factors. In Brazil it is estimated that 10.800 new cases has occurred in 2018, and its been responsible for 6.837 deaths in the year of 2015. **Objective:** This study aims to analyse mortality related to leukemia in the last 10 years. MATERIALS AND **Methods:** It is an retrospective cross-sectional epidemiological study in which DATASUS data platform has been used as search resource. The present study covered the period from January 2009 to December 2018. **Results and Discussion:** On the analysed period, the number of leukemia deaths in Brazil reached 22.320, which means a mortality rate of 7,52 per 100.000 people. The Southeast region had the highest number of deaths, and it is responsible for 44,5% of all deaths attributed to this illness (9.935 cases). On the other hand, North region had the smallest number of deaths, 14,4% (1.428 cases) - however, it was related to the highest death rate, 9,12%. Midwest region had the smallest death rate, 6,13 per 100.000 people. Northeast, Southeast and South showed similar rates, 7,38, 7,69 and 7,34, respectively. Also, skin color related to highest number of deaths was the yellow skin color, 10,57 per 100.000 people, but the highest death rate was related to white skin color with 41% of all deaths (9.162 cases). Regarding the evaluation of age, the highest number of cases was identified between 65 to 69 years old, also related to 8,38% of all leukemia deaths (1.872 cases). Highest death rate was among patients older than 80 years old, with 29,33 deaths per 100.000 people. As related in literature, the death rate and the number of deaths is similar between sexes - 7,2 for men and 7,9 for women - with 45,3% of all leukemia deaths on men (10.116 cases) and 54,7% on women (12.204 cases). **Conclusion:** The results of this study demonstrates that the mortality rate of leukemias can not be directly associated to individual sex. However, it was observed a positive relation between leukemia incidence and skin color and age, being the highest rate associated to yellow skin and elderly population. The main restriction to this study was the data plataform available, which does not stratifies leukemias subtypes.

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INVESTIGATION OF THE RS747199 AND RS760370 POLYMORPHISMS OF THE SLC29A1 GENE ON THE RESPONSE TO TREATMENT WITH IMATINIB IN PATIENTS WITH CHRONIC MYELOID LEUKEMIA FROM NORTHERN BRAZIL

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Introduction: Chronic myeloid leukemia (CML) is the excessive proliferation of granulocytic cells of the hematopoietic system and its main characteristic is the presence of the chromosome Philadélfia (Ph), which

results from the translocation of the long arms of chromosomes 9 and 22. The Ph chromosome encodes a fusion protein with deregulated tyrosine kinase activity, the BCR-ABL protein. The CML treatment is based on Tyrosine Kinase Inhibitors, and the first line drug is Imatinib. Although the CML therapy is a target-specific drug, studies show variations in response to the treatment in about 15% of patients. This lack of response in some patients may be associated with the individual genetic variability. Studies in the literature demonstrate that one of the main classes of genes responsible for drug resistance process are those expressing carrier proteins, among them is the SLC (solute carrier family) gene family. **Objective:** The present study aimed to investigate the relationship between the response to Imatinib with the rs747199 and 760370 polymorphisms of the SLC29A1 gene in patients with CML. **Method:** The sample consisted of 105 patients diagnosed with CML and treated with Imatinib. Genotyping was performed using TaqMan OpenArray Genotyping technology in QuantStudioTM 12K Flex equipment. For the genomic control, a panel of 61 ancestral informative markers was applied. **Results:** A logistic regression test was performed to evaluate the association of the polymorphisms studied and the response to Imatinib, however we did not find statistically significant data for the rs747199 (p value: 0.159; OR: 0.320; 95% CI: 0.066-1.558) and the rs760370 (p value: 0.687, OR: 1.500, 95% CI: 0.315-7.137) markers. **Conclusion:** We concluded that the polymorphisms did not demonstrate significant results in the studied population, nevertheless we emphasize the importance of further studies to understand the resistance process of CML patients treated with Imatinib, since members of the SLC gene family have been shown to be important resistance biomarkers for different types of therapies and populations.

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LEUKEMIA IN CHILDREN AND ADOLESCENTS IN RIO GRANDE DO NORTE, INCIDENCE, MORTALITY AND HOSPITALIZATIONS ANALYSIS TO 2000-2016: A POPULATION BASED STUDY

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An estimated 420,310 new cancer cases in the country for the year 2016-2017, including 10,000 leukemias. This is the 10th leading cause of death worldwide. In a previous study, from 1980 to 2010, the mortality caused by leukemia in the state of Rio Grande do Norte was 30,029 deaths. Considering the role of early diagnosis in increasing cure rates and better prognosis, the distribution of health services can be decisive in improving the quality of care provided. The aim of this study was to evaluate the distribution of juvenile leukemia in the state of Rio Grande do Norte, from 2000 to 2016. Analyzing their association with distance from the care center, type of care received (elective or urgency), reference, mortality, incidence and Human Development Index (HDI) by Municipality. **Methods:** This is a descriptive, retrospective analytical study based on population. Data were collected from the DATASUS and IBGE database, from 2000 to 2016 considering leukemia case records in children and adolescents aged 0 to 19 years. For data analysis, the Spearman correlation coefficient was applied to correlate the case variables, death and emergency care with HDI, as well as urgency, cases, mortality and HDI to correlate with the municipalities, followed by the Kruskal Wallis statistical test. **Results:** There was a progressive increase in the number of new cases, with an incidence of 19 cases in the year 2000 to 420 new cases in 2016. A strong linear correlation between mortality and total urgent care was evidenced (Rs = 0.992, p = 000), as well as between the number of cases and the occurrence of emergency care (Rs = 0.732, p = 0.000). **Conclusion:** There was a significant increase in cancer incidence in Rio Grande do Norte. The importance of a better distribution of diagnostic centers and support for clinical complications was evidenced, since mortality and total urgent care are closely associated.

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PROTOCOL ADHERENCE, CLINICAL CHARACTERISTICS AND TREATMENT OUTCOMES OF FEBRILE NEUTROPENIA IN A NON-ONCOLOGICAL PRIVATE HOSPITAL AT ESPIRITO SANTO

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Background Febrile neutropenia (FN) is a challenging oncological emergency with potentially serious complications, especially for patients (pts) treated at non-oncological centers. Data on adherence to FN guidelines recommendations at private hospitals as

well as clinical outcomes are lacking. Methods We retrospectively reviewed records of all oncologic pts with FN hospitalized in a single private center between Jul-2018 and May-2019. Linear regression was used to evaluate relationship between continuous variables, and logistic regression, when dependent variable was categorical. Fishers Exact Test and Mann-Whitney Test were used to compare categorical and continuous variables between groups, respectively. Results Twenty nine pts with FN were identified: 16 had hematological malignancies and 13 had solid tumors. Median age was 59 years; 20 pts (69%) received chemotherapy with palliative intent; 10 (34%) received regimens with high presumptive FN risk; 9 (31%) had received prophylactic granulocyte colony-stimulating factor (G-CSF). Median time from admission until prescription of antibiotics was 65 minutes (range 1382 minutes); and it did not influence duration of hospitalization (R2 0.08; *P* = 0.175) or intensive care unit (ICU) admission (OR 1.02; *P* = 0.077). Nine pts (31%) received G-CSF during the FN episode, which did not influence duration of hospitalization (*P* = 0.298) or time for neutrophils recovery (*P* = 0.124). MASCC (Multinational Association of Supportive Care in Cancer) high-risk pts had a trend towards more ICU admission (*P* = 0.057). Among 9 high-risk pts, 4 (44.4%) were admitted to ICU in comparison with only 2 of 20 (10%) low-risk pts. Patients treated with curative intent had longer hospitalization than those with palliative intent (median, 25 vs 7.5 days; *P* = 0.015). Median time of antibiotics use was 7 days, one third of pts had positive cultures, and no death related to FN occurred. Conclusion Our study showed good adherence to FN guidelines in a private non-oncologic center. Median time from pts admission to antibiotics initiation was closely accordant to international recommendations. Favorable outcomes were observed, with no death related to FN, highlighting the importance of following institutional protocols to treat these pts. Nevertheless, hospitalization of MASCC low-risk pts and use of G-CSF during the FN episode were high; and the latter did not influence duration of hospitalization or neutrophils recovery.

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QUALITY OF LIFE IN INFANT-JUVENILE PACIENTS WITH ACUTE LEUKEMIA

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Introduction: Leukemias compromise the derivation of hematopoietic stem cells and promote a proliferation of malignant cells without functional competence. Its incidence is higher among children aged 2 to 5 years. **Objective:** To analyze the quality of life of pediatric and infant-juvenile patients, with onco-hematological disease, through the AUQEI questionnaire. **Method:** This is a prospective, qualitative-based phenomenological study, developed at the Dom Tomás Hospital (HDT), in the city of Petrolina - Brazil. Result and **Conclusion:** Data were collected for 16 pediatric patients, with an average of 7.1 years. The results show that 62.5% of the participants reached a score above 48 points, and the average total score of AUQEI was 52 points, defining them with a good quality of life; and 37.5% of the participants did not reach the minimum score of 48 points, identifying them with impaired quality of life. Since the quality of life is the subjective view of the individual in relation to their inability and satisfaction with their present level of functioning, the research showed that one of the factors that promotes quality of life is the feeling of safety offered to the child with the family and friends; therefore, the moments of social and family life should be respected and promoted by the health team and the parents, through all other needs related to the treatment of the disease. All these initiatives should contribute to a set of factors that favor the psychosocial well-being of this child.

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RETROSPECTIVE ANALYSIS OF DEMOGRAPHIC DATA AND SURVEY OF MULTIPLE MYELOMA IN A WEST HOSPITAL OF PARANÁ

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Introduction: Among all neoplasms, multiple myeloma (MM) represents approximately 1 to 2%, and slightly more than 17% of hematological malignancies in the United States. It is characterized by the neoplastic proliferation of a single clone of plasma cells in the bone marrow, which leads to most of the clinical manifestations of the disease. **Objective:** To analyze the epidemiological profile, clinical and laboratory characteristics of the diagnosis of MM, correlating them with patient survival. **Methods:** Retrospective cohort study, based on physical and electronic medical records review of patients attended and / or hospitalized at UOPECCAN. **Results:** From the analysis performed and the application of the inclusion and exclusion criteria, of the 98 patients initially selected, 38 were included in the study. The majority of patients diagnosed with MM were women (63.1%) and the mean age was 60 years. Regarding hemoglobin the mean dosage was found to be 9.8 g / dL. Serum creatinine concentration ranged from 0.69 mg / dL to 6.44 mg / dL. Hypercalcemia (serum calcium > 11mg / dL) was found in 6 patients (15.7%) and lytic bone lesions in 57.8% of the patients. In determining the type of M protein by immunofixation, it was found that 50% was of the IgG / Kappa type. The majority of patients were in advanced stages of the disease - clinical stage IIIB (39.4%) of DS and stage three (50%) by ISS, and the median survival of the group studied was 50 months. And only the presence of bone lesions had a significant impact (*p* = 0.01) as an additional risk factor in mortality.

The most commonly used initial treatment (50%) was the combination of cyclophosphamide, thalidomide and dexamethasone. **Conclusion:** MM is a disease that leads to renal and bone involvement, as well as signs and symptoms related to anemia and hypercalcemia. The presence of renal impairment increases the mortality rate. However, in this study, the only variable that showed an increased risk for death, independently, with statistical significance was the presence of bone lesions. Despite the survival and progression of the disease, we know that, even with similar treatment, some patients progress rapidly while others remain for years without needing treatment, this demonstrates the heterogeneity of presentation of the MM.

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SPONTANEOUS REGRESSION OF CANCER: A SYSTEMATIC REVIEW FROM 2007 TO 2019

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Introduction: The spontaneous regression of cancer has been reported for many years, although, it is still known as a rare phenomenon and mostly of undefined etiology. Historically it is described as partial or complete regression of a malignant neoplasm in the absence of any treatment, or by using a therapy strategy considered inappropriate which must not impact on the disease biology. The last known systematic review was published by Chodorowski et al. in 2007 comprising cases from 1966 to 2006. **Objective:** to identify all published clinical cases describing spontaneous regression of cancer in addition to the systematic review last published. **Methods:** all case reports or case series, from January 2017 to January 2019, irrespective of setting or language. The search was last performed on May 1st, 2019 using two databases: the National Library of Medicine (PubMed/MEDLINE) and Thomson Reuters - Web of Science Core Collection (WOS). This search was supplemented by screening all review articles and cross-referenced cases from the retrieved papers. The following keywords were searched: spontaneous regression, spontaneous remission, neoplasia, neoplasm, cancer, tumor (the search algorithms, for each database, will be published elsewhere). This systematic review adhered to the Preferred Reporting Items for Systematic Reviews and Meta-analyses protocol (PRISMA). **Results:** 1,029 citations were identified, of which 310 reports were retrieved for full-text-inspection, after duplicated references were excluded. 207 cases met the inclusion criteria and were included in the systematic review. The most frequent regression sites were: lung (31), cutaneous (27) and hepatic (16). Of note, only 6 cutaneous tumors were melanoma and until the present systematic review, only few cases of hepatic tumors have been reported as spontaneous remission. 58% of all the reviewed cases comprises the following sites: lung, cutaneous, hepatic, leukemia, central nervous system, lymphoma and, renal. When compared to Chodorowski et al. (2007) systematic review, we found proportionally less reported cases in the studied interval. **Conclusion:** spontaneous regression continues to be a rare phenomenon, difficult to verify. The number of case descriptions seems to decrease over time, although, the most common regression sites are overall stable.

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TEMÁRIO: PESQUISA CLÍNICA
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CONCORDANCE OF CARG SCORE AND ASSOCIATIONS IN STRATIFICATIONS OF RISK OF TOXICITY TO CHEMOTHERAPY IN ELDERLY PATIENTS WITH CANCER

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Introduction: The systemic treatment of cancer is associated to higher risk of appearance of toxicity in elderly patients in spite of tumor specific response rate. Scores as CRASH, CARG and G8 were created to stratify the risk of toxicity in aged patients diagnosticated with cancer before treatment with chemotherapy. Despite these scores show effective use in clinical trials, until now they are not able to supplement wide additional geriatric evaluations. AIMS: Analise the agreement of isolated CARG score associated to hand grip strength (HGS) to determine the risk of toxicity of first cycle of chemotherapy in elderly patients diagnosticated with cancer. **Methods:** Cross-sectional study performed in agreement to Chemotherapy Center between the period of 2017-2018. Inclusion criterias: Age ≥ 60 years; Both genders; Diagnostic of pathomorphological of non-hematological cancer; Without previous exposure to chemotherapy; Under initiation of first cycle of chemotherapy. Exclusion criterias: Patients under treatment of first cycle of selected target chemotherapy or immunotherapy. CARG score was filled, and HGS was evaluated using handgrip instrument following

specific protocols. After 2nd/3rd week of first cycle of chemotherapy treatment patients were asked about present toxicities and they were graded following CTC-AE v2.0 criteria. **Results:** 151 patients were included; 80 female patients; average of age was 69 years old (60-87 years old); 92 patients under palliative chemotherapy. The most frequent toxicities were: Anorexia, neuropathy and nausea , graded as 52,3% II degree; 22,5% I degree and 24,5% III-IV degree. Through kappa coefficient (kappa = 0.13) (IC95%:0,02-0,24) showed correlation between CARG score and presented toxicities, considering low risk = I degree; Intermediary risk = II degree; High risk = III and IV degrees. Measurements of HGS using handgrip found medium values of 21,79kgf to Men and 15,26kgf to Women, considered inferior values when compared to non-oncologic aged patients. The association of CARG score to intermediary/high risk versus low risk+ HSG+ gender+ age showed through logistic regression to increase the accuracy of CARG score (AUC = 074). **Conclusion:** The performed CARG score showed agreement to toxicities demonstrated by patients and association of HGS+gender+age increased the accuracy of CARG score to predict toxicities of intermediary and high risks, considered able to impair the routine of life of elderly patients with cancer.

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DEVELOPMENT OF AN EXPERIMENTAL MODEL OF BONE METASTASIS FROM COLORECTAL CANCER

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Introduction: Colorectal cancer has natural course well described in the literature and has effective therapy when instituted early. On the other hand, its still high mortality rate is due to the late demand for medical care in advanced stages of the disease, with 10% to 15% presenting metastases. The overall incidence of bone metastases in colorectal cancer patients is 5.5%. Indicator of poor prognosis, patients with bone metastases present mean survival less than 10 months and treatment is based on radiotherapy. There are few models of bone metastasis originating from colorectal cancer, and specifically for skullcap, because of the difficulty in offering radiotherapy, models of studies for new therapies are necessary. **Objectives:** The objective of this study is to develop an animal model of bone metastasis of colorectal adenocarcinoma with a view to the development of biomarkers and / or new therapeutic modalities. **Methodology:** After culture of human adenocarcinoma cells/ HT-29 xenotransplantation was performed in skullcap in athymic mice. After 30 days, anatomopathological (HE) study was performed to characterize bone metastasis in animals of both sexes. **Results:** There was growth of mass in the cranial region, with fixation in the skullcap and of infiltrative character in the bone. It was observed an inflammatory process with hyperemic areas, areas of necrosis and intense vascularization process; white, homogeneous, slightly lobulated, with “fish flesh” appearance, typical of colorectal adenocarcinoma findings. Microscopically, clusters of neoplastic cells with hyperchromatic nuclei, prominent nucleoli, and abundant cytoplasm consistent with metastatic colorectal carcinoma were observed. There was difference in tumor development in the different sexes. In males the tumors grew more and with higher speed. Area literature demonstrates that estrogens exert an antitumor effect through estrogen receptor-mediated signaling (ERs). ERβ acts as a dominant regulator, inducing reduction in ERα-mediated gene expression with a consequent negative effect on cell proliferation. Therefore, estrogen-mediated signaling plays a protective role in colorectal cancer. **Conclusions:** It was possible to develop an animal model of bone metastasis of colorectal carcinoma with a view to the development of biomarkers and / or new therapeutic modalities. **Financial support:** FAPESP
Approval of the research ethics committee: 002.09.2015

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IMMUNOTHERAPY- RELATED TOXICITY: EXPERIENCE FROM AN ONCOLOGY CLINIC IN PERNAMBUCO

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Immunotherapy has turned an important field of Clinical Oncology in the last few years. Its profile of immune-mediated adverse events might be a challenge and need multidisciplinary treatment, with management recommendations based mostly on experts opinion. Meeting our population and epidemiology is important for a best care routine. **Objective:** Evaluate the incidence of adverse events in patients during immunotherapy at a private Oncology Clinic and correlate this information with what is available in the literature. Evaluate patients related variables as possible risk factors to present with adverse events. **Methods:** Cross-sectional study based on information from electronic medical records from patients treated with immunotherapy initiated between January 2014 and December 2018. **Results:** Among 40 studied patients, 40% had some kind of

toxicity treatment related. The most common adverse events were fatigue, rash and vitiligo. Only 4 (10%) patients had adverse events graduated between 3 and 5. The only risk factor with statistical significance for the appearance of immunomediated reactions was the number of cycles, with a p value $p < 0.001$. **Conclusion:** The profile of immunotherapy related toxicity in our study met what´s described in literature, but with smaller incidence. The number of cycles to which the patient had been exposed was a statistically significant risk factor.

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MODULATION OF RISK AND PROGNOSIS OF CUTANEOUS MELANOMA BY VARIANTS IN JAK1, JAK2, STAT3 GENES

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Background: The JAK/STAT signaling pathway supports the development, progression and metastatic potential of cutaneous melanoma (CM). The JAK1, JAK2, STAT3 proteins are coded by polymorphic gene in humans, and thus it is possible that normal individuals show inherited differences in pathway functionality. The aim of the study was to evaluate whether single nucleotide variants (SNV) JAK1 (c.1648 + 1272G > A and c.991-27C > T), JAK2 (c.-1132G > T and c.-139G > A) and STAT3 (c.*1671T > C and c.-1937C > G) influence the risk and prognosis of CM. **Methods:** We evaluated 248 CM patients and 274 controls. Genotyping and gene expression were performed by real-time PCR and quantitative PCR, respectively. For the SNV considered of most interest in the study, the gene expression and luciferase assay were performed in a genetically modified SK-MEL-28. Differences between groups were assessed by the Fisher or chi-square test. Comparisons of gene expression and luciferase results were performed using t-tests or Mann-Whitney. The progression free survival and overall survival were obtained using the Kaplan-Meier curves and Cox analyses. **Results:** Individuals with STAT3 c.*1671TT and T allele, and STAT3 c.-1937CC genotype had 1.76 (P = 0.02), 1.42 (P = 0.02) and 1.67 (P = 0.02) increased risks of CM than individuals with the other genotypes and allele, respectively. Individuals with TC haplotype of the STAT3 variants were at 1.70 (P = 0.001) fold increased risk of CM than those with other haplotypes. Finally, in a genetically modified SK-MEL-28 of STAT3 c.-1937C > G, we observed a 30% increase in the promoter activity and mRNA in cells with CC genotype compared with GG genotype. The median follow-up of CM patients was 93 months (variation: 5-221 months). In univariate Cox analysis, patients with the JAK1 c.1648+1272GG and JAK1 c.991-27CC isolated genotypes and JAK1 c.1648+1272GG plus JAK1 c.991-27CC combined genotype had 1.78, 1.71 and 1.82 more chances of presenting progression of disease, respectively. Patients with JAK1 c.1648+1272GG plus JAK1 c.991-27CC plus JAK2 c.-1132GG plus JAK2 c.-139GG combined genotype had 2.11 more chance of presenting disease progression than others. **Conclusions:** The data present, for the first time, preliminary evidence that inherited abnormalities in the JAK/STAT pathway, related to JAK1 and STAT3 gene, alter the risk, gene expression and prognosis of CM patients. Funding support: CAPES, FAPESP.

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QUALITY OF LIFE OF CHILDREN AND ADOLESCENTS WITH CANCER

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Introduction: Childhood cancer is part of a group of various diseases that occur through uncontrolled proliferation of abnormal cells and can occur anywhere in the body. Cancer brings the fear of suffering, mutilation and insecurity with respect to the future due to the risk of death. From the diagnosis, during the treatment and in its complications, the patient with cancer and its relatives experience highly stressful phases, in physical and emotional domains. The impact of the new reality can generate life, depression, irritability, disorientation, loss of control and fear of death. **Objective:** To evaluate the impact of cancer diagnosis on quality of life of children and adolescents. **Methods:** A cross-sectional, observational study was carried out in which 33 individuals between 2 and 18 years of age, both of whom were diagnosed with cancer and who were undergoing treatment or control of the disease at a juvenile cancer institution in the city of Juiz de Fora-MG. This study was approved by the Human Ethics committee (CAAE: 82561518.6.0000.5147), and the users signed the consent for participation. Pediatric Quality of Life Inventory - Cancer Module (PedsQL) was used to evaluate quality of life. The PedsQL module is a validated and translated instrument for a Brazilian culture that evaluates the quality of life in children with cancer, which includes a self-report and parent report. The instrument is composed of 27 items, categorized in eight subscales: pain; nausea, agreement in procedures, consent in treatments, concern, cognitive problems,

perception of physical appearance, communication. **Results:** In the exploratory data analysis, means and standard deviation were well below those of normative data studies: total PedsQL parent report (57.46% [17.54]), and PedsQL self-report (60.69% [15,95]). Pearson's simple correlation analysis showed that the association between the perception of parents and children is strong: r = 0.790. And in the paired t-test, considering only 16 children as respondents, there were no differences in the parents opinion with the children's opinion about their quality of life (p = 0.941). **Conclusion:** Children and adolescents with malignant neoplasms have a negative impact on their quality of life due to the disease and its treatment, and their caregivers have the same perception about their quality of life as themselves.

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A CRITICAL ANALYSIS ABOUT THE ADEQUACY OF THE SCHOOL MEALS OF MUNICIPAL SCHOOLS IN A CITY IN THE INTERIOR OF THE STATE OF SÃO PAULO ACCORDING TO LITERATURE EVIDENCES ON DIET RISK FACTORS AND PROTECTION FOR CARCINOGENESIS

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ABSTRACT According to statistics provided by Union for International Cancer Control (UICC) 43% of cancer diagnosis can be avoided by healthy lifestyles since childhood; and among those habits, diet stands out. The consequences regarding diet can be both negative and positive on cancer prevention. **Objective:** Evaluate if the menus of municipal schools of a city located in the interior of the State of São Paulo are suitable as what literature recomends on cancer prevention nutrition and identify whether foods considered cacinogenesis risk factor have been offered. We also aim to analyse the menus according to the recommendations by the National School Feeding Program (NSFP). **Method:** We performed a descriptive observational study that evaluates the menu offered in one month of 2019 for children who study in 18 municipal schools of Jaboticabal-SP taking into consideration the carcinogenic potential of each the food components presented in the menus, as well as its technical file. Then, we developed two food charts according to what studies evidenced as a food factor influencer in the carcinogenesis, either protective or harmful comparing to the recommendation of the NSFP comparing with the meals that have been offered. Result: The prevalence of food considered protective for carcinogenese is 71.875% on the schools meals and 57.5% of all foods that studies considered protectors were present, improving the nutrition. Furthermore 52.9% of all foods designated as carcinogenic are also present. And although the incident is considerable, we did not evaluate the frequency that each food has been offered. In general, Jaboticabal city follow the food recommendations from NSFP. Nonetheless with the information we got from the menus we could not evaluate if the daily caloric necessity of each child is satisfactory. **Conclusion:** School meals could be improved in Jaboticabal in order to reduce the incidence of risk factor foods for carcinogenesis and increase protective ones. Also, the discussion of the meals according to the caloric daily need of the students is imperative. Thus, the results are important to alarm local public health agents that the quality of food can still be improved when the goal is to fight cancer.

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ACCESS TO RADIOTHERAPY IN THE PUBLIC HEALTH SYSTEM IN BRAZIL: BELO HORIZONTE AS AN EXAMPLE

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Introduction: Most cancer patients need radiotherapy during their treatment process, 40% of them for curative purposes. According to Lins et al, around 458 additional linear accelerators would be necessary to supply the Brazilian public health system (SUS) demand and end the waiting line for RT. **Objectives:** To evaluate the time necessary to initiate RT after medical indication and describe the profile of patients who require definitive or neoadjuvant RT in the public setting in Belo Horizonte, at a university hospital. **Method:** Retrospective analysis of randomly selected charts from patients treated from 2012 to today in a teaching hospital in Belo Horizonte. Despite the important role in treatment of cancer patients, the hospital does not have its own RT service. **Results:** A total of 108 patients (36 women and 72 men) were evaluated, with the following diagnosis: rectal (33%), esophageal (18.5%), head and neck (17.6%) and cervical cancers (11.1%). At diagnosis, 5.6% were stage I, 25.8% stage II, 55.1% stage III and 13.5% stage IV (A), being this group of head and neck tumors patients. Treatment objective was neoadjuvancy in 39.8% of the cases and it was radical in 55.6%. The median time to biopsies results was 10 days (0-85). Median time from referral to RT consultation was 51 days (0-253), and, between the first radiotherapist evaluation and the beginning of RT,14 days (0-64). The median time between biopsy

result and beginning of RT was 106 days (8-468). RT was performed in 8 different sites and a total of 41 (37.96%) patients were treated in services with exclusive public care. **Conclusion:** Despite the law number 12,732, which establishes that once the diagnosis of neoplasia is confirmed the first treatment in Brazil must occur within 60 days, much longer time to effectively start a therapy has been observed in this cohort. The absence of a RT service in an oncological hospital may contribute to a heterogeneous and fragmented treatment. Besides investing in new RT services, a better management of the available resources could diminish this gap in our system. Within that field, we have established a patient navigation project in our hospital to try to improve the care.

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ARE THE CLINICAL ONCOLOGISTS DOING THEIR HOMEWORK REGARDING INFLUENZA VACCINATION? A RETROSPECTIVE COMPARATIVE ANALYSIS OF COVERAGE AND REFERRAL OF IMMUNOCOMPROMISED PATIENTS

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Introduction: Cancer and acquired immunocompromised patients (pts) are more susceptible to life treating Influenza (FLU) infections than general population. Brazilian Ministry of Health and Brazilian Society of Clinical Oncology (SBOC) recommended priority annual FLU vaccination to that pts at Reference Centers for Special Immunobiologicals (CRIE) since 2013. Objective Evaluate and compare the coverage of FLU vaccination between different subgroups of immunocompromised pts as well them close contacts at a referential CRIE from Espírito Santo (ES). Methods We retrospectively evaluate all adult pts who had received FLU vaccine according to National Immunization Program Information System (SIPNI) database during 2016 to 2018 at Vitória, ES. Eligible criteria included pts that received one dose of FLU vaccine and at least one of these criterias (1) were classified as having cancer related or therapeutic immunosuppression, HIV/AIDS or rheumatologic disease or (2) were referred by an oncologist/hematologist, Infectious disesases (ID) specialist or rheumatologist to CRIE. Also, all FLU vaccinated close contacts from these immunocompromised subgroups pts were analyzed. We excluded transplanted, donors and primary immunodeficiencys pts. Continuous data was described as median and range, and to categorical data we used absolute counts and percentages. Results A total of 2452 pts and 1417 close contacts were analyzed in this cross sectional study. Median age was 41 years old (range, 18-95). 227 (9,2%), 1913 (78%) and 312 (12,8%) pts had cancer related or therapeutic immunosuppression, HIV/AIDS and rheumatologic disease, respectively. Clinical oncologist and hematologist were by far the medical specialist that less indicated pts to CRIE to FLU vaccination: only 62 (1,8%). A total of 2149 (64%) and 478 (34,8%) pts were referral by ID and rheumatologist, respectively. Regarding close contacts of immunocompromised pts vaccination, 71 (5%) pts that received FLU vaccine were referred by oncohematology service, 481 (34%) pts by ID, 210 (15%) by rheumatologist and 655 (46%) by generalists doctors. Conclusion Despite the retrospective nature and database records limitations, our study found an alarming low adherence and small coverage of FLU vaccination for malignant disease pts and close contacts when compared to others special populations. We propose an increased awareness and new strategies to all health professionals to enhance immunization to cancer pts.

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BRAZILIAN INDIGENOUS POPULATION UNDER CANCER CHEMOTHERAPY: A FOUR-YEAR PROFILE

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Background: International debates highlight the need to reduce health disparities between indigenous peoples and other populations. In Brazil, according to the 2010 census, 817,963 indigenous people live in the country, of which 502,783 in indigenous lands and 315,180 in urban areas. Epidemiological data and information on cancer treatment in this population are lacking. **Objective:** To characterize the profile of Brazilian indigenous population under chemotherapy for cancer treatment, from 2014 to 2017. **Method:** An ecological study was carried out. The study population consisted of indigenous people with a principal diagnosis of cancer. All chemotherapy procedures financed by Brazils Unified Health System (SUS) and performed in the public and SUS-affiliated private health

services facilities, from January 2014 to December 2017, were included. The data source was the Authorization for High-Complexity Procedures in Oncology (APAC/Onco) registers, harbored in SUS´ Ambulatory Care Information System (SIA-SUS). Case identification was performed through selection from the race/color field of APAC/Onco. To characterize the profile the following information was collected: type of APAC, sex, age, value attributed to APAC, Brazilian region where chemotherapy was performed and types of cancer. Variables were descriptively analysed through time. All the information, software packages, and data used in the study are open-access. **Results:** There were 1817 APACs, of which 678 (37%) were first registers and 1139 (63%) continuity registers. Among the first APACs, 302 (45%) were from male patients and 376 (55%) female. The median age was 53 years, 64 for men and 51 for women. The average value attributed to APACs was R$ 759,55 +/- 1150,44. The Southern region reported the highest number of APACs (638 - 35%), while the Center-Western region reported only 139 (8%). Malignant breast neoplasm, malignant prostate neoplasm, chronic myeloid leukemia, acute lymphoblastic leukemia and malignant cervix neoplasm were the five most incident types of cancer found, considering of number of cases. **Conclusion:** In the period analysed.an increase was observed in the number of Brazilian indigenous population under chemotherapy for cancer treatment and different profile in cancer epidemiology.

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BUDGET IMPACT ANALYSIS OF VANDETANIB FOR THE TREATMENT OF MEDULLARY THYROID CANCER IN PATIENTS WITH UNRESECTABLE LOCALLY ADVANCED OR METASTATIC DISEASE

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Context: Medullary thyroid carcinoma (MTC), a malignancy of the parafollicular C cells of the thyroid gland, accounts for approximately 5% to 8% of all thyroid cancers (1,2,3). Total thyroidectomy is the most successful treatment option for early disease onset, but there are few options for the metastatic form with an unmet need for safe therapies with robust clinical evidence (4). Vandetanib is the only systemic therapy with ANVISA approval and clinical evidence from a phase III study for this indication. **Objective:** Evaluate the budget impact of vandetanib in the treatment of medullary thyroid cancer (MTC) in patients with unresectable locally advanced or metastatic disease for the Brazilian Supplementary Health System (SSS). **Methods:** A budget impact analysis was performed during a time horizon of five years (2020-2024) from the SSS perspective. The target population was calculated considering: 1) the local adult population (≥18 years old); 2) incidence of thyroid cancer; 3) rate of medullary thyroid cancer; 4) population with advanced / metastatic medullary thyroid cancer; and 5) population with advanced / metastatic medullary thyroid cancer in the SSS. The annual treatment cost was calculated by multiplying the monthly cost by 12 (months). The median time of progression-free survival (PFS), according to the ZETA study (5), estimated in 30.5 months, was used to calculate the total cost of treatment. The vandetanib market share growth was assumed to be: 10%, 20%, 30%, 40%, 50%, over 5 years consecutively, assuming all patients are currently treated with best supportive care (BSC). **Results:** The number of patients eligible for vandetanib was estimated to be 14 in the first year and 15 in the end of year 5. The total annual cost of treatment with vandetanib is BRL 611,024.80. The reimbursement of vandetanib in the SSS will have a total budget impact of, approximately, BRL 9.98 million over 5 years which represents an increase of BRL 0.27 per beneficiary of ANS. **Conclusions:** Because of the low number of patients eligible for this treatment, the incorporation of vandetanib will represent a low impact considering the total number of beneficiary of Brazilian SSS. In addition, vandetanib is the only option for patients with MTC unresectable locally advanced or metastatic.

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CARE AND ACCESS NETWORKS OF CANCER PATIENTS IN THE PUBLIC HEALTH SCENARIO: INTEGRATIVE LITERATURE REVIEW

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Introduction: Worldwide, it is estimated that more than 7 million people die annually as a consequence of cancer. The health Care Networks (RAS) are polyarchic organizations of health service sets, integrated among themselves by a single mission, by common objectives and by a cooperative and interdependent action, which allow the provision of continuous and integral attention to a given population, coordinated by primary health care. **Objective:** to understand, through scientific publications, how the health care of the cancer patient is and how the patient's access has been, as well as to reinforce the importance of RAS in the public health scenario as a strategy to guarantee access in timely

manner. **Method:** Integrative Literature Review. The National Library of Medicine and National Institutes of Health (PUBMED) databases were consulted. The descriptors in Health Sciences (DeCS) used were : access to health services, care, health care and cancer. The keyword: treatment was also used. The boolean operator used among all descriptors was AND. **Results:** 23 articles were found in the electronic databases. After reading the abstracts, 10 studies were selected for the review. Of the total publications included, the majority (n = 7) addressed the access to the cancer patient and how this access is characterized in health services. The other publications (n = 3) presented themes such as the cancer patients perceptions in relation to care. The disarticulation between the supply and the demands of the services results in iniquities in the access and inefficiency of the health system. The therapeutic trajectory of the cancer patient and access to specialized consultations and examinations was pointed out as the patient's greatest difficulties. It was also found that the difficulties related to geographic access and the availability of specialized health services generate delay in the diagnosis and implementation of an effective treatment in the health trajectory. **Conclusion:** The care flow needs to be optimized, in favor of integrality and equity in health. Solutions should be sought to reduce/ eliminate barriers, so that all actions of the cancer care line are performed in a timely manner: screening exams, diagnostic exams and treatment.

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CLINICAL, PATHOLOGICAL AND SURVIVAL ANALYSIS IN PATIENTS WITH CANCER OF UNKNOWN PRIMARY SITE: EXPERIENCE OF A LARGE ONCOLOGICAL REFERENCE SERVICE

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Background The cancer of unknown primary (CUP) is a heterogeneous group of tumors for which the origin remains unknown despite detailed investigation. Its clinical presentation occurs through metastatic symptoms that may be influenced not only by biological processes of the tumor but also due to regulatory processes in the tumor microenvironment. Faced with a very heterogeneous group of patients, there is a wide variety of clinical presentations and histological subtypes and these differences hinder the accumulation of knowledge with scarce studies on incidence, biology and treatment. Objective To describe the clinical-pathological characteristics and the overall survival of a cohort of patients diagnosed with cancer of unknown primary site. Methods A total of 2585 medical records were retrieved from patients classified as CID-10 C80, diagnosed between 2002 and 2016. After careful selection, 123 CUP cases were identified. Clinical and pathological aspects were collected and registered through the electronic capture tool RedCap (Research Electronic Data Capture). The chi-square test was used for categorical comparisons and Kaplan-Meier for global survival analysis. Results The mean age of the patients was 60 years, ranging from 19 to 88 years, with a predominance of females (56%). Forth-five percent of the cases were smokers and 26% were alcoholics. Fifty-four percent had ECOG 0 or 1 and 46% > = 2, considering 90 cases with this information available. Regarding the histological subtype, the majority of cases were adenocarcinomas (59%), followed by carcinomas (32%) and squamous cell carcinomas (9%). The liver was the predominant metastasis site in 38%, followed by lymph node (26%) and bone (24%). Regarding the treatment, 46% of the patients underwent chemotherapy, 53% of them with the carboplatin and paclitaxel regimen. Median overall survival was 4.8 months. Conclusions Patients are initially diagnosed as CUP due to a lack of better primary site investigation. The majority of "True" CUPs have poor functional performance status and are not eligible to receive chemotherapy, causing a very poor survival despite being treated in a national referral service. It is necessary to improve the reference policies after the diagnosis of CUP as well as the establishment of more assertive diagnostic and treatment protocols.

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COMPARATIVE STUDY OF ANTIFUNGAL PROPHYLAXIS WITH VORICONAZOLE VERSUS POSACONAZOLE IN PATIENTS WITH ACUTE MYELOID LEUKEMIA IN AN ONCOLOGICAL HOSPITAL FROM CURITIBA-PR

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Pulmonary aspergillosis is an invasive fungal infection that represents an important cause of opportunistic infections in patients with haematological malignancies, such as leukemias. The management of this complication

results in additional cost to the treatment, an increase in hospitalization time, and high mortality rates of the patients. Due to these aspects it is essential to establish preventive measures. The use of antifungal drugs such as voriconazole and posaconazole have been widely used in individual prophylaxis regimens for aspergillosis, but there is no consensus about the superiority between them, as there are few studies comparing both. Due to this lack of consensus in their prescription, the objective of this study was to compare the cost-effectiveness of antifungal therapies with voriconazole versus posaconazole for prophylaxis of invasive pulmonary aspergillosis in patients with acute myeloid leukemia in a oncology hospital in Curitiba-PR. This was a retrospective, cost minimization pharmacoeconomic analysis carried out by a chart review of 49 patients who underwent antifungal prophylaxis from 2016 to 2018. The project was evaluated and approved by the local research ethics committee. The effectiveness of the prophylaxis was measured by negative results of thoracic tomography and serum galactomannan dosage during the period of hospitalization. For the evaluation of the cost variable between the groups, the average costs and the average time of use of the drugs were evaluated. After analysis of the clinical outcome, 6 of 49 patients developed infection during the prophylaxis period, 5 (83.3%) were in the posaconazole group and only 1 (16.7%) in the voriconazole group. Regarding the pharmacoeconomic data, the voriconazole group presented a significantly lower cost per day (R$ 113.86 versus R$ 267.75 for posaconazole). Mean time for prophylaxis was 18,3 days for posaconazole versus 23,4 for voriconazole. Even though a longer treatment period, the mean of total cost of prophylactic period per patient was lower for voriconazole group (R$ 2,663.63) when compared to posaconazole (R$ 4,903.17). Therefore, it is concluded that prophylaxis with voriconazole was the best therapeutic choice for prophylaxis of invasive pulmonary aspergillosis in patients with acute myeloid leukemia treated at the institution.

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EPIDEMIOLOGICAL ANALYSIS OF THE LEUKEMIA MORTALITY RATE IN THE AGE GROUP FROM UNDER 1 YEAR TO 14 YEARS, BETWEEN 2008 AND 2019, IN GOIÁS AND BRAZIL

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Case presentation: this article was based on the evaluation on the mortality after the diagnosis of leukemia on children and teenagers, between 2008 and 2019, in order to verify if there was any significant change on the results in Goiás and Brazil. **Discussion:** Data were collected through DATASUS focusing on the annual mortality rate associated with neoplasia (tumors), according to ICD-10 Chapter II, selecting leukemia in the morbidity list of ICD-10, during the years 2008 and 2019, in Goiás and Brazil. Comparisons were made with other Brazilian states to see if there was an advance or a setback in the mortality rate in Goiás, as well as in Brazil, it was found that Goiás is in eighteenth place as for the mortality rate caused by leukemia. In Goiás, however, in 2019, there was a significant increase compared to 2018, from 2.66 to 7.69. As for the national territory, there was a reduction, from 2.04 to 1.10. **Final considerations:** the mortality rates related to leukemia in the national spectrum showed a reduction, however in the state of Goiás there was a significant increase. It was made public in late 2018 that there was a diversion of funds to the referral hospital for free leukemia treatment in Goiânia. This economic scenario may be linked to the increase in the mortality rate as presented by the previously mentioned data.

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GLOBAL PATIENT SAFETY CHALLENGE: USE OF TECHNOLOGY EDGE BED WITH DATA MATRIX IN ANTICANCER ORAL ADMINISTRATION

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Introduction: Medication errors with antineoplastic agents have been the subject of publications in several countries and the use of oral anticancer pharmaceutical industry increased over the last 5 years. Based on voluntary notifications in the FDA's Adverse Event Reporting System errors with antineoplastic corresponded to the second most common cause of fatal errors related to medications. Publish on security tools and methods to minimize this damage is of extreme importance as social responsibility and ethics. [1], [2] according to the NCCN-National Comprehensive Cancer Network, the use of oral anticancer agents affect all aspects in oncological patient care, including the establishment of security and membership. [3] The use of technology edge bed with data Matrix in anticancer oral administration, enables your screening since the separation, distribution and checking This technology ensures the correct medication at the correct patient (via the bracelet): only after the screening and correct check the nurse administers the antineoplastic and digitally signs with the barcode of your badge. **Objective:** to

present the results of the use of technology edge bed with data matrix in anticancer oral administration. **Method:** this is a descriptive and quantitative study conducted in large private hospital specializing in Oncology in the city of São Paulo. Conducted survey of data from medical records of patients diagnosed with cancer and in use of oral antineoplastics in October 2018 to may 2019, with the medicines dispensed by the pharmacy or brought by the patient and validated by the Clinical pharmacist. The data were collected: drugs, drug classification, diagnosis and percentage (%) edge checking bed using data matrix technology. Exclusion criteria: patient records that are not included in the information for research. **Results:** 1742 administrations were analyzed oral antineoplastics being 1253 checked with edge technology, averaging 72%. **Conclusion:** the tool edge bed management brings security in the administration of antineoplastic. The data obtained from 72% is considered positive for bringing a new scenario for the management and monitoring of eight months that bookmark, we had an increase in the membership of the process over the months and in the last month may 2019 reached 85%. As action plan, this indicator will be monitored every two weeks for identification of process failures and improving management in our healthcare practice.

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INEQUALITY AND CANCER IN BRAZIL- INVESTMENT, INSTALLED HEALTH SERVICES CAPACITY AND SOCIAL DEVELOPMENT: A COMPARATIVE ANALYSIS OF THE FACTORS RELATED TO DIFFERENT CANCER OUTCOMES IN THE 26 STATES AND THE FEDERAL DISTRICT OF BRAZIL

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Introduction: The incidence and mortality of cancer has been increasing all over the world, this phenomenon has multifactorial causes. Cancer incidence and mortality is influenced by factors as population ageing, life habits, access and quality of health services. This study evaluated the impact of discrepancies of socioeconomic and health assistance variables in the incidence, mortality and lethality by cancer in the 26 states and the Federal District of Brazil. **Methods:** The data were extracted from the Brazilian Institute of Geography and Statistics - IBGE, National Cancer Institute - INCA and the Brazilian Health Ministry database. The variables selected were human development index (HDI) Gini index, ageing rate, % poor population, number of hospital beds per 100 thousand habitants and % of population that owns health insurance plan. All these variables were correlated tothe incidence and mortality rates and to the mortality/incidence coefficient (lethality) by all neoplasms, prostate, breast and lung cancer and non- Hodgkin lymphoma. We performed normality tests and Pearsons correlation tests for normal variables and Spearmans correlation test for non- normal variables. **Results:** In relation to variables of social development and inequality, it is observed a positive correlation with incidence, mortality and lethality of all neoplasms analyzed. The greater the HDI, the older population and the lower the social inequality, the greater is the incidence (ρ = 0,749, p < 0,001) and mortality (ρ = 0.602, p < 0.001) by cancer. However, in this cases, there is a lower cancer lethality (ρ = -0.783, p < 0.001), indicating a better treatment outcome after a cancer diagnosis. The same correlation is observed in relation to the number of hospital beds per 100 thousand habitants (ρ = -0.499, p < 0.01) and the % of population that owns health insurance plan (ρ = -0.736, p < 0.001). Inverse correlation is observed for % poor population, the greater the proportion of poor people, the lower is the incidence (ρ = -0.824, p < 0.001) and the mortality (ρ = -0.686, p < 0.001), but the greater is lethality by cancer (ρ = 0.825, p < 0.001). **Conclusion:** The incidence, mortality and lethality of cancer is extremely variable among the Brazilian states. There is strong association between worse treatment outcomes in states with lower social development, greater social inequality and lower installed health services capacity.

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LUNG 192: COMPARISON OF TWO ACTIVE SEARCH STRATEGIES IN P ATIENTS WITH PULMONARY LESIONS SUSPECTED TO BE NEOPLASTIC IN A MUNICIPALITY OF THE METROPOLITAN AREA OF PORTO ALEGRE, RS - BRAZIL

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Introduction: Lung cancer is one of the most lethal neoplasms in both men and women. Smoking remains the main risk factor for developing lung cancer. Tumors can be cured if diagnosed early and submitted to the right treatment. Once these tumors become unresectable the prognosis is negatively affected. Surgery has been considered the only treatment to

achieve the cure. The absence of screening protocols for smokers is one reason responsible for a late diagnosis. As there are no screening protocols, active search systems were established to follow patients with suspicious lung lesions. Aim The aim is to compare the active search model by text application in patients with suspicious lesions on images to the active search by telephone. This was tested in the town of Canoas, RS. Methodology Model 1 Fifty four patients of the group contacted via an instantaneous text application were seen. Primary care physicians sent those with suspicious images chest X-ray or CT scan - to a multidisciplinary team composed by chest surgeons, clinical oncologists and pathologists for consultancy and referral to imaging tests. Model 2 Seventy six patients of the group contacted by telephone, who had suspicious lesions on images, were sent by the primary care physicians directly to the chest surgeon. Results Model 1: 32 patients received the diagnosis of cancer; 28 (26.3%) had bronchial origin; 11 were treated with surgical resection because their lesions could probably be cured and 17 were referred to the oncologist due to advanced disease. This represents a 39.3% rate of operable patients. In the comparative analysis Model 1 included patients with higher mean age; most of them were male, with a significant increase of malignancy. The number of benign tumors was significantly lower. Operable tumors were found more frequently than in Model 2, but the statistical difference was not significant. Conclusion Although the comparison between these systems does not show an increase of the operable tumors rate, there were significant differences in the diagnosis of malignant lung neoplasms and the amount of benign tumors. The rate of operable tumors is similar to that seen in North American and European countries with well-established screening methods. These findings depict that active search increases the general practitioners awareness of the patients at risk of lung cancer and that these are sent to the chest surgeon on time for a curable treatment.

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OMISSION OF CONFLICTS OF INTEREST DISCLOSURES IN SOCIAL MEDIA DURING SCIENTIFIC MEETINGS

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Introduction: Everyday use of social media among health professionals is likely increasing for both personal and professional intents. However, such practice can be accompanied by perilous exposure, as conflicts of interest might bias public perception obtained via fast-paced electronic social networks. Here we address conflict of interest disclosures in social media posts during annual meetings from the American (ASCO) and European (ESMO) oncology societies, which were presumably performed by health professionals. **Methods:** We applied a Web API request interception approach to retrieve metadata from public posts shared on Instagram and Facebook during ASCOs and ESMOs annual meetings in 2017, 2018, and 2019 (ASCO only). A total of 10 hashtags were used to search for publications in the aforementioned social media: #ASCO17, #ASCO18, #ASCO19, #ASCO2017, #ASCO2018, #ASCO2019, #ESMO17, #ESMO18, #ESMO2017, and #ESMO2018. To completely avoid selection bias associated with the surveyors social media accounts, public data scraping was performed using a JavaScript package without logging into social media. The content of the shared posts was examined using natural language processing (NLP) algorithms in Python 3.7. **Results:** Overall, 4,522 shared posts were retrieved in their JSON format from Instagram, encompassing 9,959 comments and 340,717 likes. After removing 167 duplicate posts due to the simultaneous use of two or more hashtags, we obtained 1,171 (26.9%), 1,348 (30.9%), and 1,836 (42.2%) unique posts from 2017, 2018, and 2019, respectively. Video posts accounted for 7.9% of all publications over the three-year period. 3,075 posts were published between 7AM and 7PM (70.6%) and 1,280 (29.4%) between 7PM and 7AM. After applying lexical analysis using word tokenization, we recognized a total of 750 Brazilian posts (17.2%). Despite the high volume publications, we did not identify conflict of interest disclosures in any of Brazilian (0%), Spanish written (0%), or English written (0%) posts captions. Facebook data mining will be presented during the meeting. **Conclusion:** Social media posting has progressively increased during oncology meetings in the US and Europe over the last three years. Our data point towards a remarkable omission of conflict of interest in these venues. Professional guidelines to assist healthcare professionals in ethical communication in electronic social networks are warranted.

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TEMÁRIO: POLÍTICAS PÚBLICAS/ACESSO/FARMACOECONOMIA/ GESTÃO EM SAÚDE
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PATTERNS OF THERAPY FOR EGFR+ NON-SMALL CELL LUNG CANCER IN THE BRAZILIAN PUBLIC SYSTEM: WHEN APPROVAL DOES NOT MEAN ACCESS

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Background: Lung cancer is the leading cause of cancer death in Brazil. Targeted therapies, such as the Epidermal Growth Factor Receptor (EGFR)-tyrosine kinase inhibitors Erlotinib (E) and Gefitinib (G), became important treatment options for patients with EGFR+ advanced non-small cell lung cancer (NSCLC). In 2013, the National Committee for Health Technology Incorporation (CONITEC) approved E and G

for use in the Brazilian public healthcare system (SUS). However, there is limited data on the access of these drugs in the public setting. **Methods:** We evaluated data in Brazils SUS (DATASUS), originated from the Ambulatory Chemotherapy Information Systems SUS (SIASUS). In order to retrieve the data, we used the International Classification of Diseases C34 (the ICD for Malignant neoplasm of bronchus and lung) and the period comprised. We then applied SQL queries to reach the data presented here. **Results:** We identified 227,000 lung cancer chemotherapy-related treatment between January 2015 and December 2018. The total of chemotherapies corresponds to approximately 38,000 patients, with 925 and 342 of them receiving G (2.4%) and E (0.9%), respectively, at some point of their treatment. In patients with stage IV disease (61%; 24,654 patients) Gefitinib was used in 3,3% (809 patients), and Erlotinib was used in 1,2% (294 patients). In the first line setting, G was used in 56% of patients and E was used in 65%. Patients with access to G had a mean age of 63 years (26-94 years) and 62% of patients were females. The average time of treatment with G was 8.2 months. Patients who had access to E had a mean age of 63 years (30-92 years) and 61% of patients were females. The average time of treatment with E the average was 3.3 months. **Conclusion:** Despite the approval of G and E by CONITEC , access to these therapies is extremely low in the Brazils SUS. This may be explained by barriers in testing tumor samples for EGFR, and lack of government funds for drug acquisition. The higher number of G therapy compared to E may be related to the lower cost of G. Drugs cost may also be related to the superior average time of treatment with G, since there was an exchange of E by G along some patients treatment course. The substantial number of cases where treatment was not applied in accordance with clinical guidelines may potentially result in worse outcomes and unnecessary costs.

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PLAN, DEVELOP, IMPLEMENT AND EVALUATE A MANAGEMENT SPECIALIZATION COURSE IN MANAGEMENT ONCOLOGY USING BLENDED LEARNING

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Background: Identifying effective methods for safeguarding the efficient functioning of the healthcare system contributes significantly towards establishing a successful healthcare organization. Quality management encompasses protocols and guidelines in decision-making and in the evaluation of processes and treatment flowcharts, data analysis and health indicators, and addresses improvement in the interaction between different health professionals. Qualifying health professionals to perform quality management has represented a barrier to implementing a well-structured management system. Indeed, the pathway to qualifying health managers is often poorly outlined, with clear gaps in the definition of their competencies, training and career plans. Therefore, studies and education-related actions aimed at qualifying health professionals in management are vital if health services of excellence are to be established. The present study aimed to plan, develop, implement and evaluate a management specialization course in oncology using blended learning. **Methods:** Following approval by the institutions internal review board, the study was conducted at a teaching hospital and Reference Centers of High Complexity in Oncology in Northeast Brazil . The Analysis, Design, Development, Implementation and Evaluation (ADDIE) model was used to plan, develop, implement and evaluate the course. Data were collected as the course participants who had concluded all the modules evaluated the program. **Results:** A management course in oncology, consisting of ten sequential modules, was developed and implemented between March 2018 and February 2019. The course consisted of monthly face-to-face encounters, each with 12 hours of activities, and distance education using a virtual learning environment. Each module was presented by a specialist on the subject in question. After the end-of-course conclusion work had already been handed in and evaluated by the tutors, the participants completed a form to assess the course using Kirkpatricks training evaluation model. **Conclusions:** A management course in oncology was developed using the ADDIE model. A high degree of satisfaction was found among the participants regarding improvements in their management skills and their professional behavior. The expectation is that this initiative will ultimately improve healthcare and reduce costs, as well as encourage further innovative educational actions for health professionals.

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REAL-TIME DETECTION OF PATIENT-REPORTED OUTCOMES (PRO) THROUGH AN APP (TUMMI): A BRAZILIAN EXPERIENCE

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Introduction: patient-reported outcomes (PRO) data are critical for informing patient-centered care and have been shown to enhance our ability to communicate with patients, to control their symptoms, and to impact their survival. However, PRO data are not commonly collected in routine cancer care due to challenges such as cost, technological rigidity of existing electronic health records, and misalignment of stakeholders incentives. Aim of study: in an effort to bridge the unmet needs of PRO collection and integration into routine cancer care, we developed a symptom monitoring and management system that were launched as a free mobile app (Tummi) in August, 2018. We want to share with other professionals involved in cancer patient care the data collected since the emergence of this facility. **Methods:** Tummi is designed for reporting 28 common symptoms from the National Cancer Institutes Common Terminology Criteria for Adverse Events. Symptoms are reported in a 3-point scale mild, moderate and severe. Also, patient reported an overall well-being with 3-point scale represented by emojis. Tummi has the functions to record symptoms, summarize the reporting in physical printout, and automatically store and analyze the input symptoms into graphical interpretations. **Results:** since august 2018, 1708 patients downloaded and enjoyed the app. Of these, 408 recorded spontaneously their diagnosis, being the majority (80%) patients with breast cancer. The most common side effect registered was fatigue followed by back pain, pelvis pain and respiratory alterations. Regarding general well-being reports, male patients (22%) and female patients (78%) totaled 5265 records. Of these, on 56% of the time the patients were well, while in 36% they were average and in another 8% they felt bad when made the report. **Conclusions:** there is a huge opportunity to better deliver our care for cancer patients and empowered them through collecting their own data. Tummi proved to be doable and understandable for patients language in Brazil.

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TECHNOLOGICAL INDICATORS FOR EARLY DETECTION AND SCREENING OF BREAST CANCER IN WOMEN IN PERNAMBUCO STATE

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Introduction: Breast cancer is a public health problem that affects women around the world. The incidence of this cancer in the biennium 2018 - 2019 is 59,700 cases. For the State of Pernambuco is estimated 2680 new cases in 2018, which is equivalent to more than 7 new cases per day. Early detection of breast cancer leads to a less aggressive treatment to the patient, increased survival with quality of life and a favorable prognosis. **Objective:** To evaluate the technological indicators for the early detection and screening of breast cancer in women in the state of Pernambuco. **Method:** The study was an exploratory, epidemiological descriptive, explanatory, time series, with a quantitative approach, developed from statistical information available in the DATASUS database between February 2010 and February 2014. Data were organized and structured with support statistic TabWin (version 3.2) and Microsoft Excel 2007. **Results:** We analyzed 745,998 mammograms in Pernambuco. From the technological indicators, a greater number of mammography examinations were performed in the target population between 50 and 69 years old (50.69%), for the indicator equivalent to "mammograms performed for age-group screening". About 38% of the exams were performed on women aged 40 to 49 years. Regarding the indicator that verified the "number of previously performed mammograms", in the target population, 68.5% reported not having performed the test against 11.9% of previous effectiveness. The results demonstrated an equivalence in the "time interval between the request, the accomplishment and the release of the report in the screening exam", in average 10 days between each indicator, with relevant percentage. The same occurred between the "request and result of histopathological examination of the breast" with 93.7% from 0 to 30 days. The distribution of "mammograms results in the BIRADS category", established a significant result of 86% of the women with category 1 - 2. The largest number of cases with BIRADS alteration was concentrated in the age group between 45 - 49 years. **Conclusion:** The study shows the need for investment in qualification for professionals and education of the population, on the purpose of adequate screening appropriate to risk groups can reduce breast cancer mortality rates and direct public spending for health promotion.

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THE IMPORTANCE OF THE USE OF PALM PERSONAL DIGITAL ASSISTANT (PDA) TO PREVENT MEDICATION ERRORS (ME) DURING ADMINISTRATION OF ANTINEOPLASTIC DRUGS

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Introduction: Me are a problem for the health system, worsening when antineoplastic drugs are involved. The incidence of such errors ranging from 3 to 16% vary according to differing definitions and methodologies. The process of ensuring that each patient gets the right medication, in the proper dosage and at the right time, is complex and involves a number of professionals. It is therefore important to encourage the use of technology aimed at minimizing errors and increasing security, such as the inclusion of PDA. This device combines patients' personal information with prescription information (name of protocol, medications, dilution, dosages, infusion time, sequencing). As a result, professionals are able to access a synchronized set of medical, nursing, and pharmaceutical information at the exact moment of prescription execution. **Objective:** To describe the frequency and types of errors registered during the administration of antineoplastic drugs and to estimate the number of preventable patient harm using the PDA. **Methods:** A number of treatment performed in the central infusion of antineoplastic drugs at the Márcio Cunha Hospital, Ipatinga/MG, between Jun/2015 and Apr/2019 was obtained from the database. The number of preventable ME was calculated based on the literature, reporting that the chemotherapy errors occur with at least 3% of adult oncology patients. All prescriptions are performed and manipulated using electronic systems and all patients allocated to the infusion center use identification wristbands with two-dimensional code. Before the execution of each drug the nurse identifies the patient through the Palm PDA device, besides verbal conference. All adverse events are encourage to be detected, categorized and recorded (wrong patient, drug, dose, time, route, sequence, number of days supplied, missed medications, incorrect preparation, expired preparation). RESULTS 35.834 treatments were analyzed between Jun/2015 and Apr/2019. The PDA device was used in 100% of patients and 14 ME were reported (0,04%). These errors involved wrong time (n = 9; 64.28%), incorrect preparation (n = 2; 14.28%), wrong sequence (n = 2; 14.28%) and missing medication (n = 1; 7.14%). The estimated numbers of possible ME were 1.075 (3% of all treatment performed). It was calculated a > 98% ME reduction. **Conclusion** Palm PDA was an important monitoring device, allowing significant reduction of the number of potential errors in administration of antineoplastic drugs.

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THE RELATIONSHIP BETWEEN DEMOGRAPHIC AND CLINICAL-ONCOLOGICAL CHARACTERISTICS AND DEATH RISK AMONG INDIVIDUALS WITH BREAST CANCER, PROSTATE CANCER, AND COLORECTAL CANCER

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Introduction: Cancer is one of the leading causes of death worldwide and a rising public health problem. In Brazil, there is an annual increase in cancer incidence and mortality, requiring managers of the Unified Health System (SUS) to reexamine their epidemiological data and develop more effective actions for reducing mortality. **Objective:** To evaluate the relationship between demographic, clinical and oncological characteristics and death risk among individuals with one of the three most frequently diagnosed tumors in the Eastern macroregion of the state of Minas Gerais, namely prostate cancer, breast cancer and colorectal cancer, respectively. **Method:** a retrospective cohort study that included all patients diagnosed with prostate, breast, or colorectal cancer, recorded in the Hospital Cancer Registry Database of the Oncology Unit of Hospital Márcio Cunha, in the year of 2012. The information available in the registry of new cases was standardized by the National Cancer Institute (INCA). The c2 test, the Fisher exact test and multiple logistic regression were used in the analyzes. **Results:** 578 patients were included, of which 340 were men (61.9%) and 358 (61.9%) were ≥ 60 years. Of the total number of cases analyzed, 296 (51.2%) were of prostate cancer, 171 (29.6%) of breast cancer and 111 (19.2%) of colorectal cancer. Only 193 patients began treatment < 60 days after diagnosis and 154 cases (26.7%) had TNM III or IV staging. The variables that presented statistical significance in the univariate analysis for overall survival were age, gender, smoking, primary site, TNM grouping, time to begin treatment and source paying for diagnosis. However, after logistic regression, only the TNM cluster and primary tumor site were independent prognostic factors for overall survival. **Conclusion:** An interval > or ≤ 60 days between the diagnosis and the start of treatment did not show a correlation with death

risk. Advanced tumors (TNM III or IV) had a higher risk of death when compared to early-stage disease, and breast cancer patients had the worse prognosis when compared to patients with prostate cancer.

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TEMÁRIO: PSICO-ONCOLOGIA
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PSYCHOLOGICAL RISK INDICATOR IN ONCOLOGY (PRIO): APPLICATION IN WOMEN WITH BREAST CANCER

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There is growing recognition that psycho-oncology is an important component of the comprehensive care of people diagnosed with cancer. The Psychological Risk Indicator in Oncology (PRIO) is a psychological screening instrument based on coping strategies, social support, perception of illness, negative affectivity and psychological distress, that aims to identify cancer patients at risk for poor adjustment, allowing early referral for psychological counseling. **Objectives:** The present study aimed to investigate psychological, behavioral and social factors that may influence psychological distress in patients with the early onset of adjuvant in breast cancer. **Method:** The present study took place in a private cancer center in Rio de Janeiro between June 2018 and May 2019. All patients who had breast disease and who were admitted to chemotherapy were included in this study. The PRIO score was applied to all patients by psychosocial team care and the main characteristics were retrospectively analyzed. **Results:** A total of 113 patients were included. One hundred percent of the patients were of female gender, all residing in the state of Rio de Janeiro and the median age was 49 (47-67) years. A total of 36 patients (32%) presented poor adjustment risk. The five PRIO factors were identified: negative perception of illness (n = 13; 36%), psychological distress (n = 9; 25%), emotional social support (n = 7; 19%), active coping (n = 4; 11%), and instrumental social support (n = 3; 9%). Five patients (14%) presented two or more PRIO factors identified. **Conclusions:** In the present study we evaluated the association of PRIO score with risk of poor adjustment in breast cancer patients. Psychiatric morbidity in patients with cancer is a common characteristic, observed in 32% of patients. The study indicates that the negative perception of illness was the most affected PRIO factor. The high level of negative perception contributes to greater difficulty in adhering to cancer treatment. Thus, the PRIO can contribute to psychological screening, identifying patients at risk of poor adaptation and favoring its attendance in psychological services, which can contribute to the quality of care provided in oncology.

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QUALITY OF LIFE AND GENETICS: BETWEEN INFLAMMATION AND PSYCHOSOCIAL ASPECTS

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Background: High inflammatory cytokine levels are associated with fatigue, anxiety and depression, and can alter the quality of life (QoL) of family caregivers (FCGs) of patients with head and neck cancer in palliative care (HNCPC). In addition, single nucleotide variants (SNVs) in cytokine genes, such as IL1B c.-598T > C (rs16944), IL1R2 c.-2009G > A (rs4141134), IL6 c.-237G > C (rs1800795), and TREML2 c.430A > G (rs3747742), can influence individual differences in cytokine production. However, the roles of the referred SNVs on the QoL of FCGs are unknown. Thus, the aim of our study was to evaluate the influence of the referred SNVs in the QoL of FCGs of patients with HNCPC. **Methods:** Genomic DNA of 100 FCGs (median age: 50 years, 17 men and 83 women) of patients with HNCPC was analyzed by real-time PCR to identify the genotypes using TaqMan® assays. Demographic characteristics (gender, age, ethnicity, marital status, tobacco and alcohol use, religion, kinship with the patient, means of transport, employment and follow-up time) were obtained by specific questionnaires. QoL was measured with the abbreviated World Health Organization QoL questionnaire (WHOQOL-bref). The WHOQOL-bref measures the domains: overall QoL, healthy satisfaction, physical health, psychological health, social relations, and environment. The scores for domains range from zero to 100; zero being the lowest QoL and 100 the highest QoL score. Differences between groups were assessed by t test and multiple linear regression. **Results:** FCGs who were employed had lowers scores for QoL on the overall QoL (63.8 vs. 71.6, p = 0.04), physical (58.7 vs. 64.3, p = 0.04), psychological (58.6 vs. 68.2, p = 0.005), social (58.4 vs. 67.5, p = 0.05), and environment domains (55.4 vs. 62.3, p = 0.02). Those who used collective transportation (57.1 vs. 65.4, p = 0.01) had lower scores of QoL related to psychological domain. In addition, the smokers FCGs (49.6 vs. 58.92, p = 0.03) and carriers of IL6 CC variant genotype (47.9 vs. 58.6, p = 0.05) had lower scores of QoL for the environment domain than others. **Conclusions:** Employment status, means of transport, tobacco use and the IL6 rs1800795 SNV seems to influence the QoL of FCGs. Once validated in additional studies, we believe that our results can contribute to identify FCGs with decrements in their QoL and provide better and more specialized care.

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TEMÁRIO: PULMÃO/TUMORES TORÁCICOS
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ATEZOLIZUMAB RELATED ENCEPHALOPATHY

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Case presentation A 70-year old woman presented with acute confusional state. She had been receiving atezolizumab for locally invasive lung adenocarcinoma. Laboratory workup showed no significant abnormalities. Electroencephalogram (EEG) was negative for epileptiform discharges. Brain MRI showed a solitary left occipital brain lesion compatible with brain metastasis, which had been submitted to stereotactic radiation therapy in previous months. There were no signs of vascular abnormalities or meningeal enhancements. Cerebral spinal fluid (CSF) was not compatible with inflammatory or infectious findings (leukocytes 0; red blood cells 50; protein 56mg/dl; glucose 80mg/dl). CSF cultures and quantitative tests were negative. Serological paraneoplastic antibodies were also negative. Neurological examination revealed no focal neurological deficits. The patient was alert, disoriented to time and place. Language assessment revealed a moderate receptive aphasia. She was submitted to high doses corticosteroid therapy and symptoms resolved within a week. **Discussion:** Atezolizumab is a humanized IgG1 monoclonal antibody of IgG1 isotype against the protein programmed cell death-ligand (PD-L1). This antibody has become a new treatment option of patients with non-small cell lung cancer (NSCLC) after failure of cisplatin based chemotherapy. Treatment with checkpoint inhibitors can induce adverse effects related to an exacerbated immune response. Autoimmune neurotoxicity such as encephalitis and encephalopathy are rare events that have been described associated with atezolizumab treatment. Our patients presented with encephalopathy that could not be attributed to any other cause and she had an effective response to corticosteroid therapy. **Final Remarks:** Although rare, neurological autoimmune induced events should be promptly recognized in patients receiving checkpoint inhibitors therapy in order to improve patient care and avoid poor outcomes.

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TEMÁRIO: PULMÃO/TUMORES TORÁCICOS
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EGFR T790M MUTATION-POSITIVE FREQUENCY ANALYSIS BY DROPLET DIGITAL PCR OF PLASMA SAMPLES FROM PATIENTS WITH NSCLC

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Introduction: Around 85% of lung cancer cases are non-small cell lung cancer (NSCLC), and mutations that lead to sensitivity or resistance to the treatment of this type of cancer are well described. The three most relevant EGFR mutations are: deletion at exon 19 (DEL19) and L858R, both conferring sensitivity to first generation tyrosine kinase inhibitors (TKIs), and T790M, that leads to resistance to the above mentioned inhibitors, but it is sensitive to third generation TKIs. Herein, we describe the overall frequency of these mutations in patient plasma samples. **Methods:** In this study, 397 reports were analyzed (data collected between April 2018 to March 2019) in order to evaluate EGFR T790M mutation-positive frequency. These reports were of liquid biopsy assays, by droplet digital PCR (ddPCR), in which EGFR DEL19, L858R, and T790M were assessed. **Results:** From the 397 reports, 232 (58%) were wild-type for all the three mutations tested, and 165 (42%) were positive for one or more mutations, being 66 (16,62%) positive for T790M. Analyzing only positive results (n = 165), mimicking the kind of population used in FFPE studies, T790M frequency reaches 40%, similar to what is observed on studies using plasma. Furthermore, when 207 patients from the 232 wild-type reports were searched for previous or later results, 73 (35%) had not any previous or later results, 91 (44%) had previous results (being 23 wild-type, 54 positive for DEL19 or L858R, 13 positive for other sensitivity mutations and 1 positive for T790M), and 43 (21%) had later results (30 results negative for T790M and 13 results positive for T790M 12 from FFPE samples and 1 from plasma). **Discussion:** These data show that, unlike patients analyzed in literature, we receive at IHP samples for the diagnostic of sensitivity mutations and also wild-type samples for these mutations (that could have been collected in a time point when there is not sufficient cfDNA), making the population evaluated by us different from the populations used in most scientific studies, which could explain the difference in T790M positivity frequencies. More samples will be analyzed in order to add greater robustness to our findings.

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TEMÁRIO: PULMÃO/TUMORES TORÁCICOS
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FIRST RESULTS OF A BRAZILIAN NEVER- OR LIGHT-SMOKER NON SMALL CELL LUNG CANCER COHORT: EPIDEMIOLOGY AND MOLECULAR DATA

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Introduction: The incidence of lung cancer in non- and light-smokers is increasing worldwide. There are scarce data about their epidemiology, risk factors and molecular landscape in this population of non small cell lung cancer in Brazil. **Objective:** Here we aimed to present the first results of a Brazilian prospective and uninstitutional cohort of non- or light-smoker NSCLC patients (pts) **Methods:** From July/2018 to July/2019 we prospectively enrolled all consecutive histologically-proven NSCLC pts (regardless of stage) with a lifetime cigarette/tobacco exposure < 100 cigarettes (defined as never-smokers) or < 10 pack-years per lifetime, and ≥15 years since last cigarette (defined as light-smokers). In addition to demographic data, exposure information related to outdoor and indoor air pollution exposure, secondhand smoking, family history of cancer, occupational agents, among others, were obtained by in-person questionnaires. Tumor characteristics such as histopathology and molecular drivers were collected. Symptom burden was evaluated using a validated MD Anderson Symptom Inventory for Lung Cancer scale (0-10) and the MRC dyspnea scale. Written informed consent was obtained from all subjects enrolled in this study. **Results:** In this first report, 63 pts were studied: 38 female (60%), median age 64 yo (31-82). Only nine (14%) pts were ≤ 45 yo and 36 (57%) were ≥ 60 yo. 55 pts (87%) were never-smokers and 34 pts (54%) were caucasian. Any family history of cancer was present in 38 pts (60%). Household combustion of solid fuel (wood) was mentioned by 27 pts (43%) during their lifetime. Indoor air pollution or tobacco smoke exposure was referred by 43 pts (68%). No illicit abuse drugs was informed. Adenocarcinoma was the most frequent diagnosis (93%), and 59 pts had advanced disease (93%). EGFR activating mutations were detected in 18 pts (29%), ALK translocations in 5 pts (8%), and 1 pt presented ROS1 rearrangement (1.5%). Among those pts with available molecular profiling, 38% had a targetable alteration. Symptoms interfering with general activity, normal work and walking ability were rated with highest degrees. Median MRC dyspnea grade was 1. **Conclusion:** Non-small cell lung cancer in never- or light-smokers displays distinctive epidemiological and pathological characteristics in this studied population. The high frequency of targetable alterations is a key aspect in treatment selection in these pts.

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GENOMIC BIOMARKERS ANALYSIS WITH CIRCULATING TUMOR DNA (CTDNA) IN METASTATIC NON-SMALL CELL LUNG CANCER (NSCLC) PATIENTS - A SINGLE CENTER EXPERIENCE OF THE CLINICAL POTENTIAL AND THERAPEUTIC UTILITY

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Introduction:NCCN Guidelines have provided recommendations for genomic biomarker testing to identify patients (pts) with advanced non-small cell lung cancer who are likely to benefit from targeted therapies. While tumor tissue biopsy remains the gold standard, challenges include difficulty in obtaining tumor biopsy, insufficient tissue and longer waiting time for results. Cell tumor DNA (ctDNA) analysis is an attractive alternative due to its non-invasive nature, more rapid turnaround time and ability to reliably identify actionable mutations. **Objectives:**To describe a clinical experience using ctDNA and its diagnostic and therapeutic utility. **Methods:**A retrospective observational cohort was conducted at a single center from June/2017-April/2019. Clinical characteristics of pts with NSCLC who underwent ctDNA assay performed as part of routine clinical testing at diagnosis or at disease progression were evaluated and the results are compared to testing performed on tumor tissue. Electronic medical records were reviewed and a descriptive analyses was done. **Results:** 43 pts and 45 samples of ctDNA were assessed. Median age at diagnosis was 62y (range 37 to 83), 53.5% were women, 82.9% ECOG 0 or 1, 27.9% were never-smokers. Tumor tissue genotyping was feasible in 23 pts, of whom 65,2% had a relevant finding, as follows: EGFR mutation (mut) in 6/23 (26.1%), ALK fusion in 5/23 (21.7%), KRAS mut in 4/23 (17.4%). Liquid biopsy detected ctDNA in 43/45 samples (96%), 60% of the cases a relevant biomarker was identified. The test was performed at initial diagnosis in 28/45 (62.2%) and at first disease progression in 17/45 (37.8%). Genomic alterations identified by ctDNA assay included: EGFR mut 10/45 (22.2%); exon 19 deletion (6/10), EGFR L858R (2/10), EGFR G719 (2/10), ALK fusion 3/45 (6.7%), BRAF non-V600E 3/45 (6.7%) and KRAS in 11/45 (24.4%). Among pts with EGFR/ALK mut who underwent testing at progression, mechanisms of resistance identified included: EGFR T790M in 3/13 (23.1%) and EGFR/KRAS mut in 1/13 (7.7%). The median turnaround time was 8 days (4 to 16). Concordance between tumor tissue and ctDNA was observed in 17/22 (77,27%). **Conclusion:**In our cohort, ctDNA led to identification of genomic alterations at a rate similar to tumor tissue testing, with a high concordance and faster turnaround time. Integration of ctDNA into the routine management should be considered as an alternative to obtain genotyping for first-line therapy selection in patients with NSCLC.

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SURVIVAL ANALYSIS ACCORDING TO GENOMIC BIOMARKERS CHARACTERIZATION IN FIRST-LINE TREATMENT IN ADVANCED NON-SMALL CELL LUNG CANCER PATIENTS

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Introduction: Target therapies have changed the treatment paradigm for patients (pts) with advanced non-small cell lung cancer (NSCLC). Broad genomic testing is recommended to identify mutations in EGFR, BRAF V600E and ERBB2; ALK, ROS1, RET and NTRK fusions; MET amplification and MET exon 14 skipping variants; and KRAS mutation. **Objectives:** To evaluate the survival outcomes in NSCLC patients according to genomic biomarkers analysis. **Methods:** A cohort study was conducted in a retrospective observational fashion at single institution between June/2017 to April/2019. Patients with NSCLC who had genomic biomarkers analysis performed by circulating tumoral DNA (ctDNA) assay and/or tissue biopsy were evaluated. Data were collected in electronic medical records. Simple descriptive analysis was done and survival outcomes were assessed using Kaplan-Meier estimator and Log-Rank test. All statistical tests were two-sided and statistical significance was defined as $p < 0.05$. **Results:** Forty-three pts with NSCLC were assessed. Median age was 62 years, 53.5% were women and 82.9% had a performance status ECOG 0 or 1. Most of the pts (55.8%) were former smokers, followed by never-smokers (27.9%) and current smokers (16,3%). The majority of pts had adenocarcinoma (81.4%), followed by NSCLC with poor differentiation (14%), one patient with squamous cell carcinoma and another with sarcomatoid adenocarcinoma. Metastatic disease was observed in one or two sites in 41,9%, and 34,9% had three sites. Based on genomic evaluation, patients with no actionable mutation (30%) had a median overall survival (OS) of 10.6 months, pts with EGFR mutation (23%) 55.3 months, 11,6% with an ALK fusion achieved 74.8 months, 28% with a KRAS mutation had 11.7 months and 7% with BRAF non-V600E mutation 2.9 months ($p = 0.019$). Progression free survival (PFS) at first-line therapy, in its turn, for patients with no actionable mutation achieved a median of 2.6 months, EGFR mutation 16.3 months, ALK fusion 9.5 months, KRAS mutation 5.3 months and a BRAF non-V600E mutation 0.6 months ($p = 0.017$). **Conclusion:** Patients with targetable alterations such as EGFR mutation and ALK fusion had a significant better survival outcomes. Genomic evaluation is essential in the decision-making process at first-line therapy in advanced NSCLC.

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ADDITION OF IFOSFAMIDE AND ETOPOSIDE TO STANDARD CHEMOTHERAPY FOR ADULT PATIENTS WITH LOCALIZED OSTEOSARCOMA: A MATCHED-COHORT STUDY

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Background Adult patients (pts) with localized osteosarcoma have poorer outcomes than pediatric patients in general. One factor that contributes to these poorer outcomes is the elevated toxicity rates with chemotherapy (CT) regimens containing high dose methotrexate in adult pts. Thus, a standard regimen frequently used as neoadjuvant/ adjuvant therapy for adult pts is cisplatin and doxorubicin. We aimed to evaluate the efficacy and safety of the addition of ifosfamide and etoposide (IE) to standard CT for adult pts with localized osteosarcoma. Methods We performed a matched-cohort study of adult pts treated for localized osteosarcoma in a single academic cancer center between Jun-2009 and Dec-2017. All pts who received neoadjuvant/ adjuvant IE in addition to standard CT were included in the analysis (IE group). For each patient in IE group, we selected one patient matched for stage, histologic subtype, age, and gender who received standard CT alone (Standard group). Standard CT consisted of cisplatin and doxorubicin. Overall survival (OS) and recurrence-free survival (RFS) were estimated with Kaplan-Meier method and curves were compared by log-rank test. Cox regression was used to obtain hazard-ratio (HR) and 95% confidence interval (CI). Results Six pts were identified in IE group, and six matched pts were included in standard group. Median age was 20.1 years (range 17-36). All pts had osteoblastic osteosarcoma. Most of them were male (N = 10, 83%), and had stage IIB (N = 4, 33%) or III (N = 6, 50%). With a median follow-up of 31.7 months, median RFS was 11.3 months in IE group in comparison with 31.8 months in standard group (HR 1.68, 95% CI 0.36 7.89; $P = 0.505$). Median OS was 44.4 vs 51.2 months, respectively (HR 1.57, 95% CI 0.29 - 8.46, $P = 0.594$). 5-year OS rates 33% in IE group and 40% in standard group. Grade ≥ 3 toxicities were mainly hematological and were numerically higher in IE group (83% vs 33%; $P = 0.242$). One grade 5 toxicity occurred in IE group due to sepsis. Conclusion In this small matched-cohort study, the addition of IE to standard CT for adult pts with localized osteosarcoma was not associated with improved RFS or OS. Additionally, it resulted in alarming rates of high-grade toxicities. Investigations of other treatment strategies are warranted to improve outcomes.

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AVALIAÇÃO DE RECIDIVA EM PACIENTES PORTADORES DE TCG CAPANACCI III COM USO DE DENOSUMAB NEOADJUVANTE

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GCT is a rare tumor that can be linked to a lot of morbidity, especially for young people between 20-40 years of age, when they are locally advanced. The treatment is surgical, but the intra-lesional intervention brings a chance of a high recurrence. Bone resection decreases this chance, but came with a greater surgical morbidity and mobility sequelae related to the procedure. Denosumab has been used with great success in the treatment of this pathology, but there are still no data related to its use in order to reduce the morbidity of the surgery. We did a retrospective descriptive study of all patients with TCG Capanacci 2 and 3 treated in HCP from November 2014 to December 2018. We used the frequency to determine the recurrence rate of localized tumors that used denosumab. We treated 41 patients with GCT, of whom 33 used denosumab. 63% were women and 37% were men. 85.4% were Capanacci 3. The location was mainly in femur distal and proximal tibia, but we had patients with tumors in number, radius, orbit and basin. Tolerability was very favorable and the main toxicity recorded were headache and asthenia. Only 1 patient had ONM. Pain control was achieved shortly after the first dose in most patients. 20 patients with localized tumors were bioassayed after denosumab and 90% showed negativity for the neoplastic component. 61% of the patients had an intra-lesional procedure, while 39% had some type of bone resection. The local recurrence rate was 12%. 4 patients present with irresecaval or metastatic disease and come with good control of the disease with maintenance of denosumab. The treatment of TCG Capanacci 2 and 3 with denosumab is effective and seems to avoid local recurrence. The chance of recurrence in patients who had an intra-lesional approach was very similar to that of patients who had bone resection.

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CLINICAL CHARACTERISTICS AND PROGNOSTIC FACTORS OF EPITHELIOID HEMANGIOENDOTHELIOMA: A SINGLE-CENTER RETROSPECTIVE STUDY

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Introduction: Epithelioid hemangioendothelioma (EHE) is a rare malignant vascular neoplasm with an estimated prevalence of less than 1 case in 1 million. Due to its rarity, clinical characteristics remain unclear. There is no stablished standard treatment. **Aim:** We planned to evaluate the clinical characteristics and prognostic factors of EHE. Materials and **Methods:** Patients with EHE evaluated at our institution between January 2000 and May 2019 were enrolled. Data including demographic characteristics, treatment patterns, pathological results, and survival were gathered from electronic clinical charts, and a retrospective database was constructed for analysis. The primary endpoint was overall survival (OS). Descriptive statistics was used to report population characteristics, OS was calculated with the Kaplan-Meier method, and Fishers exact test was used for associations analysis. **Results:** Eighteen patients were included. Diagnosis was based on histopathological evaluation and immunohistochemical positivity for CD31, CD34 and factor VIII. The mean age at diagnosis was 41.8 years (17 85). The anatomical site of the primary lesions was visceral in 7 pts. Seven pts (38.8%) had metastasis at diagnosis and the main site of metastatic disease were the lungs (71.4%). Two pts with localized disease evolved with metastatic disease after local treatment; the progression-free survival was 11 and 52.1 months. Seven pts had surgical treatment; 2 pts received adjuvant chemotherapy and 4 pts received adjuvant radiotherapy. Three pts had data regarding first line chemotherapy and included pazopanib, paclitaxel and gemcitabine. After a median follow-up of 51.7 months, median OS for non-metastatic pts at diagnosis was 63.4 months and 18.8 months for metastatic pts (p = 0.348). Median OS for pts with visceral primary disease was 17 months and 63.4 months for pts with non-visceral primary disease (p = 0.025). Visceral primary disease was significantly associated with presence of metastasis at diagnosis (p = 0.002). **Conclusion:** EHE can occur in any site of the body. Surgery is the primary choice of treatment. Metastasis at diagnosis and visceral primary disease are associated with poor prognosis.

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CLINICAL FEATURES AND OUTCOMES OF ADULTPATIENTSWITHABDOMINOPELVIC DESMOPLASTIC SMALL ROUND CELL TUMOR: A BRAZILIAN SINGLE CENTER EXPERIENCE

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Introduction: Desmoplastic small round cell tumor (DSRCT) is a rare mesenchymal malignancy. Only about 200 450 cases have been described in the literature since it was first described in 1989. Despite multimodal treatment, DSRCT has a poor prognosis, and approximately 60 70% of pts succumb to the disease within 3 years. **Aim:** We describe the clinical features and outcomes of patients with DSRCT treated at our center. Materials and **Methods:** Retrospective medical record review was performed on DSRCT patients referred to our institution (from 2007 to 2018). Clinical and imaging data were extracted and summarized with descriptive statistics. OS was estimated by the Kaplan-Meier method. **Results:** Fourteen patients with abdominopelvic DSRCT were included. Diagnosis was based on histopathological evaluation and detection of EWS-WT1 fusion by FISH. Mean age was 26.4 years (41 15) and 71.4% were male. All pts had symptoms at diagnosis; abdominal pain and ascites were the most frequent. 43% of pts presented with visceral involvement at diagnosis; liver was the most frequent site of lesion (35.7%). Lymph node involvement was present in 9 pts (64.3%). Ten pts underwent neoadjuvant chemotherapy. Nine pts had cytoreductive surgery and 4 received adjuvant radiotherapy. Hyperthermic Intraperitoneal Chemotherapy (HIPEC) was performed in 4 pts. For the first-line chemotherapy, regimens containing vincristine, anthracyclines and alkylating agents were the most used. In all cases, HIPEC was performed with doxorubicin plus cisplatin. For the entire cohort, with a median follow up of 80.9 months, median OS was 37.9 months. Complete cytoreductive surgery (CCR0) followed by HIPEC did not translate into better survival (27.0 v 26.8 months; p = 0.78). The only 2 pts in the cohort alive had the full treatment and the other 2 pts that had HIPEC did not develop intra-abdominal relapse. Pts who received platinum-containing regimens in 1st line chemo or HIPEC showed longer OS (50.7 v 35.4 months; p = 0.147). **Conclusion:** About half of the pts were died due to DSRCT within 3 years of presentation. The selected group that underwent CCR0 and HIPEC had no abdominal relapse, but most of the pts still present distant metastasis during follow up, meaning that more effective chemotherapy is necessary to improve long-term outcomes. Platinum-containing regimens of chemotherapy can play a role in disease control and should be a regimen to be evaluated in future trials.

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INCIDENCE OF SECOND PRIMARY MALIGNANCIES IN PATIENTS WITH SPORADIC DESMOID TUMORS

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Introduction: Desmoid tumors (DT) account for approximately 0.03% of all neoplasms and fewer than 3% of all soft tissue tumors. Although locally aggressive and with a tendency for relapses, DT have no potential for metastasis or dedifferentiation. Most desmoids arise sporadically, and 5-15% of all cases are associated with familial adenomatous polyposis (FAP). However, the association of non-FAP DT with other second primary malignancies has not been adequately characterized. **Objective:** To investigate the incidence of second primary neoplasms in patients with DT not associated with FAP. **Methods:** A retrospective analysis was performed using the electronic database of a private hospital, including patients treated between Jan/2013 and May/2019. Eligibility criteria were: age of 18 years old or older and histologically confirmed desmoid tumor. Clinical characteristics and incidence of other primary tumors were evaluated. Patients with confirmed diagnosis of FAP were excluded. **Results:** A total of 34 patients diagnosed with DT were identified. FAP was present in 4 of these patients (11%). Among the non-FAP patients, 10 (33%) were male and 20 (64%) were female. The mean age of diagnosis was 37,9 yo (21-69 yo). Sites of presentation varied: abdominal wall in 33%, intra-abdominal in 16%, chest wall in 13,3%, paravertebral, breast and shoulder in 10% each, back and thigh in 3,3% each. Six (20%) patients had a second primary malignancy: 1 patient with GIST, 1 with colorectal cancer, 1 with testicular cancer, 2 with papillary thyroid cancer and 1 with melanoma. In 66% of these patients, the desmoid tumor was diagnosed before the second primary neoplasm, and all of these patients had undergone surgical treatment. Benign tumors such as neurofibroma and Erdheim Chester disease were identified in 2 patients. Somatic molecular analysis was performed in 6 patients and mutations in KIT, KRAS, MUTYH, MSH6, BRAF and POT1 were found. A second neoplasm was diagnosed in four of these six patients. **Conclusion:** Second primary neoplasms were present in 20% of our non-FAP desmoid tumors cohort. These data raise attention to the possibility of non-FAP hereditary conditions or shared risk factors, highlighting the need for close follow up of these patients.

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TREATMENT OUTCOMES AND PROGNOSTIC FACTORS FOR ADULT PATIENTS WITH OSTEOSARCOMA AFTER PROGRESSION ON FIRST-LINE CHEMOTHERAPY: A 10-YEAR ANALYSIS

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Background Studying osteosarcoma in adult patients (pts) is challenging due to its rarity. For pts with unresectable or metastatic disease, treatment strategies remain limited, especially after progression on first-line chemotherapy (CT). We studied a cohort of adult pts with osteosarcoma with the aim of evaluating the outcomes and prognostic factors after progression on first-line CT. Methods A cohort of adult pts with osteosarcoma who progressed on first-line CT was retrospectively evaluated. Pts were treated between 2008 and 2018 in an academic cancer center. Overall survival (OS) was calculated from time of progression on first-line CT to death. Kaplan-Meier method was used for survival analysis. Prognostic factors were evaluated with Cox regression. Results A total of 70 consecutive adult pts with osteosarcoma were studied. Median age was 27 years (range 16 69). Primary tumor site was lower limb, upper limb and axial in 68.5%, 11.4%, and 20% of pts, respectively. Most pts (N = 49) presented localized disease at diagnosis (EI, 8.5%; EII, 48.5%; EIII 12.8%), but 51% of them (N = 25) recurred. Metastatic disease (EIV) at presentation occurred in 21 pts (30%). Thirty-six pts with advanced disease (at presentation or after recurrence) progressed after first-line CT. Among these pts, 77.8% (28/36) received second-line CT and 33.3% (12/36), third-line CT. Most common CT regimens were ifosfamide plus etoposide (N = 19) as second-line and gemcitabine plus docetaxel (N = 4) or oral ciclofosfamide (N = 4) as third-line. After progression on first-line chemotherapy, median OS was 16.4 months (95% CI, 9.3 NR). One-year and 3-year OS rates were 63.1% (95% CI, 43 77%) and 32.4% (95% CI, 13 53%), respectively. Factors associated with inferior OS were ECOG performance-status (PS) 3-4 (HR 71.7, 95% CI 6.75 761.7, $P < 0.001$), EIV at diagnosis (HR 11.7, 95% CI 3.2 42.3, $P < 0.001$), and telangiectatic histologic subtype (HR 17.8, 95% CI, 1.5 211.4, $P = 0.022$). Gender, age, and primary tumor site were not associated with survival. Conclusion After progression on first-line CT, adult pts with osteosarcoma present poor survival outcomes. ECOG PS 3-4, metastatic disease at diagnosis and telangiectatic histologic subtype were identified as prognostic factors.

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USE OF DENOSUMAB IN GIANT-CELL TUMOR AT A PUBLIC HOSPITAL IN SOUTHERN BRAZIL: REPORT OF 13 CASES

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Introduction: Giant-cell tumor (GCT) is a rare neoplasia, benign but locally aggressive, that causes significant bone destruction. It represents 4 to 10% of primary tumors of bone and occurs mainly in young adults. Definitive treatment is surgical, with complete tumoral resection followed by autograft, homograft, arthrodesis, unconventional endoprostheses or methylmethacrylate. In most cases, surgery is accompanied by high morbidity and variable recurrence rates, depending in the site, size and type of surgical intervention. The RANK receptor is a key mediator of osteoclastogenesis. Denosumab, a RANKL inhibitor, acts by decreasing tumoral osteoclastic activity and is approved for treatment of GCT when surgery is not possible or is accompanied by high morbidity. **Objective:** Introduce the service experience using denosumab in patients with GCT. **Methods:** Reporting of cases based on the review of medical records about all cases of GCT from the Ambulatory Service for Adolescents and Young Adults (AYA), from May 2011 to February 2018. A total of 13 cases were selected. Among the cases, there were two patients with diagnosed pulmonary metastases, whose initial treatment was chemotherapy. Among the other patients, desonumab was elected for the initial treatment in eight cases and in three of them desonumab was started in our institution after prior surgical intervention at other centers. Regarding surgery after use of desonumab, among all patients under treatment, one was still receiving it, one missed follow-up and six underwent surgery. Four patients had not undergone surgery. When AP exams were assessed after the use of desonumab in non-metastatic patients, from the six patients who had undergone surgery, four of them showed changes related only to the use of the drug and without evidence of the disease. By analyzing the metastatic pulmonary patients, one received desonumab for 13 months,

with complete pulmonary response. The other one, when diagnosed, had no evidence of recurrence until May 2017. Among the six patients who had received desonumab and had subsequently undergone surgery, four of them remained without evidence of the disease. The use of desonumab was very well tolerated by all patients. **Conclusion:** We concluded that desonumab treatment of GCT is a relevant one, once we provided a less aggressive treatment and with encouraging results, from complete responses after surgery or without any evidence of the disease, even when surgery is not possible.

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ECCRINE POROCARCINOMA: A SERIES OF 11 CASES AND A LITERATURE REVIEW OF RARE CUTANEOUS NEOPLASIA

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Introduction: Eccrine porocarcinoma (EP) is rare, accounting for up to 0.01% of all cutaneous tumors. However, it is the most frequent malignant tumor in the eccrine gland, originating from the terminal cells of the intraepithelial portion of the eccrine duct, acrosyringium. In 18 to 50% of cases, it arises from preexisting poroma (benign tumor of the sweat gland derived from the acrosyringe). Malignancies may be induced by immunosuppression or ionizing radiation. It occurs more frequently in the lower limbs (LLM), trunk or head and neck (CCP), 44%, 24% and 24% respectively. It affects adults between 50 and 80 years of age, with a peak incidence in the seventh decade of life. They can be confused with squamous, clear, Paget cells or melanocytes. The diagnosis should be confirmed using immunohistochemistry (IHC), including: carcinoembryonic antigen (CEA), cytokeratin (CK), epithelial membrane antigen (EMA), p53 and p63. CD117 has been reported as highly effective, especially in distinguishing with squamous cell carcinoma. It is related to a high risk of recurrence and up to 20% of cases progress to metastatic disease. Objective The objective of this study is to describe the cases of EP, this rare cutaneous neoplasia, attended at a Federal University Hospital in the last 20 years. Method The cases were selected from an institutional database, based on the pathological characteristics compatible with the neoplasia studied, during a period of 1999 to 2019, with a total of 11 cases. After the selection, a medical review of the data was performed. Results The mean age at diagnosis was 73.5 years (48-93), with a similar prevalence between the sexes. 50% located in upper limbs, 27% lower limbs and the other locations varied between trunk and CCP. The IHC profile was: positives mainly 75% CEA, 100% EMA, 100% P63, 100% Ki67 (50-80%), 100% 34BE12, 100% AE1AE3. All patients were treated with surgery and 36.3% needed margin expansion. No adjuvant treatment was performed and we did not observe relapses or metastases. Three patients died (all due to infectious cause without correlation with the disease), 4 were alive and had no evidence of disease and 4 lost follow-up. Conclusion Eccrine porocarcinoma is a rare malignant cutaneous tumor with high potential for morbidity and mortality. Given its rarity, there are currently no guidelines for diagnosis, treatment and follow-up. Literature is scarce and the vast majority are case reports.

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TEMÁRIO: TUMORES CUTÂNEOS
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ICGC BRAZILIAN MELANOMA PROJECT

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Introduction: Melanoma Melanoma is the most aggressive form of skin cancer with increasing prevalence in Brazil. The comprehensive molecular profiling of these tumors in Brazilian population is largely unknown. Objectives The aim of this project is to perform a genomic profile by whole genome sequencing (WGS) of Brazilian melanomas patients that were submitted to ICGC consortium. Methods We reported the WGS using Illumina paired-end sequencing strategy (> 30 X-fold coverage) of 90 cases and respective matched normal. Data analysis was performed as follows: i) Mutect, Pindel and Mutsig for SNVs/indels; ii) HMMcopy and Gistic for copy number variations;

iii) Breakdancer and Delly for structural variants; iv) SomaticSignatures for mutational signatures. NRAS and TERT mutations were confirmed by Sanger sequencing. All the findings were compared with clinical data using Fishers exact test. Results Overall we observed an average of 15 mutations/Mb at the coding region. The most frequent type of substitutions identified was: C > T (82.8 %). Among the classic genes involved in melanoma biology, we found that 45 % of patients had BRAF mutations, being the V600E the most frequent (87.0 %). BRAF, NRAS, HRAS, KRAS, and NF1 mutation were mutually exclusive. The regions 5p15.33 and 11q13.3 were most frequently amplified and 9p21.3 deleted. Frequent structural variations, i.e. translocations and inversions were found in chromosomes 5 and 6. BRAF and TERT mutations, among other variations, were significantly more frequent in superficial than acral lentiginous melanomas. Conclusion We showed that Brazilian melanoma patients exhibit a similar mutation profile to the one reported in other populations. Acral/ lentiginous melanoma subtype showed a distinct mutation frequency.

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IMUNOTHERAPY APPLIED IN METASTATIC MERCKEL NEOPLASIA USING IMMUNOSUPPRESSANTS

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Case presentation: A.L., male, 59 years old, with history of renal transplantation by amyloidosis in October/2015 and in use of cyclosporine, predinisone, carvedilol and spironolactone. In February 2018 it envolved with a progressive growth nodule on the right hand dorsum and nodule in the right malar region, and was submitted to resection with a pathology compatible with Merckel cell carcinoma immunohistochemistry positive to Chromogranin and Sinaptofisin in the malar region and squamous cell carcinoma in the dorsal region of the right hand. In July 2018, a new nodule appears in the malar region with new resection and selective cervical dissection with anatomopathological compatible with metastasis of Merkel cell carcinoma in four of four lymph nodes found. Again, a new lesion appears in the pre -auricular region with palpable lymph nodes in the right cervical region in September/2018. A new procedure is performed showing Carcinoma of Merckel cells relapsed with infiltration into parotid and submandibular glands, compromised surgical margins, metastases in forty eight of fifty-four lymph nodes evaluated, including with extranodal extension. In same month was evaluated by a oncology team, which was requested PET-CT whose result evidenced a 2.2 cm nodule resense in the left infraorbital dermis (SUV 9.3) and initiated adjuvant radiotherapy in the malar region. In November of 2018, there was a new significant local tumor progression during radiotherapy. Started avelumabe concomitant of ciclosporin suspension and dose reduction of prednisone worsening of renal function however without indication of hemodialysis. It evolves with satisfactory response, including complete response in the evaluation of March/2019 with good tolerance to immunotherapy. **Discussion:** Merckel cell carcinoma is a neuroendocrine cancer of the skin, with high potential for aggressiveness, most frequently affecting the face, head and neck, and correlated to prolonged exposure to the sun, advanced age and use of immunosuppressants. Chemotherapy regimens do not show good survival rates, so immunotherapy acts on PD-1 and PD-L1- aggregates good clinical, radiological and quality of life results. **Final Comments:** Immunotherapy adds positive responses in metastatic merckel cell carcinoma with good tolerance, representing a safe and effective treatment option.

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TEMÁRIO: TUMORES CUTÂNEOS
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ROUTINE MELANOMA GENOTYPING PROFILE AT BARRETOS CANCER HOSPITAL

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Melanoma is the 5th most common cancer in men and the 7th in women with 9,320 deaths in 2018 in the U.S. Melanoma molecular basis are well explored and it can guide the patients prognosis and therapy. In Brazil, knowledge of melanoma mutation landscape is limited. Here, we investigated the somatic variation profile of melanoma-related genes in a series of Brazilian patients. Formalin-fixed paraffin-embedded (FFPE) samples from 102 patients diagnosed with melanoma at Barretos Cancer Hospital, Brazil in 2018. Following DNA isolation, mutation analysis was done by TruSight Tumor 15 (TST15) panel at MiSeq based-next generation sequencing platform (Illumina). Panel content focuses on relevant somatic variants in 15 cancer-associated genes: AKT1, GNA11, NRAS, BRAF, GNAQ, PDGFRA, EGFR, KIT, PIK3CA, ERBB2, KRAS, RET, FOXL2, MET, and TP53. Variant calling analyses were performed using Sophia-DDM platform (Sophia). Samples were analyzed when > 500x of average coverage was observed and variants were classified when observed a minimum variant fraction of 10%. Overall, 8.8% (9/102) of cases were inconclusive due to poor quality DNA. Of the conclusive 93 cases, we observed BRAF mutations in 41.9% of

cases (39/93), been the great majority (38 cases) at codon 600, and one case at codon 598. NRAS mutations were identified in 12.9% (12/93) of cases with 10 cases exhibiting mutation at codon 61, and 2 at codons 12-13. Only one case (1.1%) showed KIT mutation at exon 17. In the analyzed cases, mutations in BRAF, NRAS and KIT genes are mutually exclusive. Moreover, we identified mutations of TP53 in 9.7% (9/93) of cases, most of which are simultaneous with BRAF and NRAS variants. No variants or small percentage of variants with clinical significance were observed in EGFR, FOXL2, GNA11, GNAQ, MET, RET and AKT1, ERBB2, KRAS, PDGFRA, and PIK3CA oncogenes. Brazilian melanomas exhibit BRAF and NRAS mutation frequencies similar to the reported in the international literature. The routine identification of pathogenic and targeted mutations by TST15 panel in FFPE melanoma cases is feasible and crucial for therapeutic management of melanomas patients attended at Barretos Cancer Hospital.

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TEMÁRIO: TUMORES CUTÂNEOS
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STANDARD-DOSE NIVOLUMAB IN COMBINATION WITH REDUCED-DOSE IPILIMUMAB FOR PATIENTS WITH ADVANCED MELANOMA

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The combination of Nivolumab 1mg/kg (NIVO1) plus Ipilimumab 3mg/kg (IPI3) has demonstrated better responses rates and progression free survival compared to NIVO alone in first line treatment of advanced melanoma (Checkmate 067). Recently, NIVO1+IPI3 has shown impressive results in select patients with brain metastasis (Checkmate 204). However, this regimen is also associated with extreme high G3/G4 immune-related adverse effects (59%). In attempt to maintain efficacy and reduce toxicity, trials evaluating reduced-dose ipilimumab (1mg/kg) associated with full dose anti-PD1 have been conducted, but with no definitive response to this question (Checkmate 511 and Keynote 029). The aim of this study was to evaluate the objective response rate (ORR) and toxicity of the alternative regimen NIVO 3mg/kg plus IPI 1mg/kg. We conducted a retrospective analysis of patients with advanced melanoma treated in first line setting with this combination at a single center. Survival analysis were calculated with the Kaplan-Meier method. Patients were enrolled from December 2017 to April 2019. The median follow-up was 9.1 months (95% CI: 4.5-13.7). Twenty-one patients were analyzed, 15 male (71.4%), median age of 61.5 (39 to 84 years), 9 (42.9%) with BRAF mutation. 14% / 86% were irresectable stage III / stage IV, respectively. Among stage IV patients, 5 (26.4%) were M1c, 6 (31.6%) M1d (brain metastasis) and 30% had elevated LDH. Liver metastasis accounts for 31.6% of the visceral disease. Response rate was evaluated with CT (28%), PETCT (33%) or both (39%). ORR was 57% (52.4% partial response). Disease control rate (ORR+ SD) was 76%. Progression free and overall survival were 75% and 82% at 12-month analysis, respectively. Median survival time was not reached for both curves at this time point. 62% (13/21) presented adverse events (AEs). Among them, 6/13 (46%) were G3 / G4 (most skin and gastrointestinal AEs). 28% of patients did not complete the induction phase, 33% of those due to toxicity. Fourteen percent of patients discontinued treatment definitively due to toxicity. In conclusion, our study has shown that alternative regimen of NIVO3+IPI1 is associated with similar response rates of the phase III trial of NIVO1+ IPI3 with lower incidence of grade 3 and 4 adverse effects. As limitation of our data, this is a small number of patients and a retrospective analysis.

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TEMÁRIO: TUMORES DE CABEÇA E PESCOÇO
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ASSOCIATION OF A GENETIC VARIANT IN THE SEROTONIN MODULATOR WITH RISK AND PROGNOSIS OF OROPHARYNX CANCER PATIENTS

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Background: In addition to the regulation of emotions, serotonin (5-HT) is also responsible for the activation of pathways associated with cell proliferation. The synthesis of 5-HT is dependent on family enzymes tryptophan-hydroxylase (TPH). 5-HT can influence the progression of tumors through the activation of the phosphatidylinositol 3-kinase (PI3K) and serine-threonine kinase (AKT) pathways, related to cell proliferation, migration and differentiation. Polymorphisms in genes involved in biosynthesis and 5-HT uptake have been reported, suggesting that genetic variability may be related to tumor development. The genetic single nucleotide variation (SNV) located in the promoter region of the TPH2 (rs4570625, c.-844G > T) gene can modulate 5-HT synthesis. However, the effects of referred SNV on the risk of occurrence and prognosis of oropharynx squamous cell carcinoma (OPSCC) have not yet been described. **Objectives:** Evaluate the influence of SNV TPH2 rs4570625 on the risk and prognosis of OPSCC. **Methods:** TPH2 genotypes of 210 OPSCC patients (median age: 57 years, 191 men, 19 women, 199 smokers, 11 non-smokers) and 210

controls (median age: 43 years, 161 men, 49 women, 183 smokers, 27 non-smokers) were identified in DNA by real-time PCR using TaqMan® assays. Patients were treated with conventional protocols, based in cisplatin and radiotherapy. The differences between groups were assessed by chi-square and multiple logistic regression. Event-free survival (EFS) and overall survival (OS) times were estimated by Kaplan-Meier (K-M) and Cox methods. **Results:** The frequencies of GT or TT (48.6% vs. 47.1%, p = 0.65) and TT (6.7% vs. 7.6%, p = 0.88) genotypes were similar in patients and controls. Individuals with referred genotypes were under similar risks of OPSCC. At 60 months, EFS was similar in patients with TPH2 genotypes (GG: 50.9%, GT: 51.3%, and TT: 58.9%, p = 0.64, K-M estimates). However, the OS was shorter in patients with GG or GT genotypes than those with variant GG genotype (45.0% vs. 62.5%, p = 0.02, K-M estimates; Cox: hazard ratio: 2.76, 95% confidence interval: 1.10-6.90, p = 0.03). **Conclusions:** Our results suggest, for the first time, that TPH2 rs4570625 SNV is an important inherited factor for the prognosis of OPSCC. Our findings, once validated in additional studies, will contribute to personalize the therapy of OPSCC patients.

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TEMÁRIO: TUMORES DE CABEÇA E PESCOÇO
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IMPACT OF AN EDUCATIONAL INTERVENTION ON THE KNOWLEDGE OF DENTAL SURGEONS OF THE SINGLE HEALTH SYSTEM ON MOUTH CANCER AND OROFARINGE, IN A NORTHEAST BRAZILIAN STATE

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Introduction: Late diagnosis of mouth cancer and orofaringe (MOC) is a serious public health problem. Advanced tumors are the most found in outpatient clinics. Dental surgeons (CD) are one of the most likely groups of health professionals who can detect early-stage MOC because of their clinical appearance. **Objective:** To evaluate the impact of an educational intervention on the knowledge of the CD of the Unified Health System (SUS) of Alagoas about MOC. **Method:** Community trial with CD of the SUS of the state of Alagoas. Approved by the research ethics committee. All SUS CDs from Alagoas (750) were invited, a course was offered in the cities of Maceió and Arapiraca, if they agreed to participate in the study, they signed the Informed Consent Term (TCLE), answered a questionnaire already validated about MOC knowledge in two moments. **Results:** In Maceió, 270 CD's signed the TCLE and returned the questionnaires answered, and in Arapiraca 151 CD's, totaling 421 CDs, representing a rate of 60.1% of the CD of Alagoas. In the Maceio data analysis, the mean age was 40 years (22-68 years); 55.6% of CD's are specialists and 39.6% are general practitioners. In Arapiraca, the mean age was 32 years (22-66 years); 55.3% of CD's are specialist and 45.3% are general practitioners. In Maceió, the MOC questionnaire, answered before the intervention, showed a regular knowledge of the majority of the CD 43.7%, and 28.9% had a good knowledge, being 5.98 the average of the note, while in Arapiraca 1.3% of the CDs reached an optimal score, 38.4% had a regular knowledge and 32.5% had a good knowledge, 6.54 being the average of the grade. After answering the first questionnaire, they were part of a course, and soon after the CDs answered the same questionnaire, and there was an improvement in their performance: in Maceió, with 11.1% with excellent knowledge and 58.5% with a good knowledge, and in Arapiraca there was an improvement in CD performance, with 2.8% with excellent knowledge and 52.8% with good knowledge. The T-test for independent samples (5% significance), the mean difference between the second application of the questionnaire and the first application of the questionnaire in both Maceió and Arapiraca obtained a $p < 0.001$. **Conclusion:** The study showed that there was an improvement in the knowledge of CD on MOC after an educational intervention, most of the evaluated dental surgeons had regular knowledge. The need for continuous training and continuing education is evidente.

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KEYNOTE-048 SUBGROUP ANALYSIS: LATIN AMERICAN PATIENTS WITH RECURRENT/METASTATIC HEAD AND NECK SQUAMOUS CELL CARCINOMA

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Introduction: KEYNOTE-048 (NCT02358031) is a global phase 3 trial of pembrolizumab (P) or P + chemotherapy (C) vs EXTREME (E) as first-line therapy for patients (pts) with recurrent and/or metastatic (R/M) head and neck squamous cell carcinoma (HNSCC). At final analysis of the ITT population (pop), both P and P+C had superior OS vs E in pts with PD-L1 combined positive score (CPS) ≥20 and ≥1; P+C vs E was superior in the total pop. Safety was favorable or similar to that of E (Rischin et al. J Clin Oncol. 2019;37[suppl; abstr 6000]). **Objective:** To evaluate the efficacy and safety of P or P+C vs E in Latin American (LA) pts in KEYNOTE-048. **Methods:** Pts were randomly assigned to P, P+C, or E arms. Primary end points were OS and PFS per RECIST v1.1. Database cutoff was February 25, 2019. This post hoc analysis included pts from Argentina, Brazil, Chile, Colombia, Mexico, and Peru. Treatment difference in OS and PFS (by Kaplan-Meier analysis) was assessed using Cox regression model with Efrons method of tie handling with a single treatment covariate. Results and **Conclusions:** Of 882 pts, 141 were LA (48 [P], 44 [P+C], 49 [E]). Baseline characteristics for LA pts were generally similar across arms except for more women and pts with CPS≥20, ECOG PS of 1, and metastatic disease in the P+C arm. Median follow-up was 10.5 months. HR (95% CI) for OS (P vs E) was 0.57 (0.27-1.18; n = 38) in CPS≥20, 0.75 (0.45-1.24; n = 75) in CPS≥1, and 0.86 (0.56-1.33; n = 97) in total pop; HR (95% CI) for PFS was 0.99 (0.49-1.97), 0.96 (0.59-1.56), and 1.20 (0.79-1.82), respectively. ORR (P vs E) was 19.0% vs 47.1% in CPS≥20, 19.4% vs 41.0% in CPS≥1, and 14.6% vs 42.9% in total pop. Median DOR (P vs E) was 18.8 vs 5.4 months. HR (95% CI) for OS (P+C vs E) was 0.61 (0.30-1.25; n = 41) in CPS≥20, 0.81 (0.50-1.33; n = 78) in CPS≥1, and 0.92 (0.59-1.45; n = 93) in total pop; HR (95% CI) for PFS was 0.69 (0.35-1.36), 0.77 (0.48-1.25), and 0.89 (0.58-1.37), respectively. ORR (P+C vs E) was 41.7% vs 47.1% in CPS≥20, 33.3%% vs 41.0% in CPS≥1, and 31.8% vs 42.9% in total pop. Median DOR (P+C vs E) was 6.9 vs 5.4 months. Grade 3-5 treatment-related AE rate was 16.7% (P), 65.9% (P+C), and 66.0% (E). P and P+C provided OS benefit vs E in LA pts with CPS≥20 and CPS≥1, consistent with that observed in the global ITT pop. Responses were durable with P or P+C. Safety was favorable (P vs E) or similar (P+C vs E). These results support the use of P or P+C as first-line therapy for LA pts with R/M HNSCC.

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TEMÁRIO: TUMORES DE CABEÇA E PESCOÇO
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PREVALENCE OF HPV POSITIVE OROPHARYNGEAL TUMORS IN PATIENTS TREATED AT THE HOSPITAL DE CANCER DE BARRETOS

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Head and neck cancer is the eighth most common neoplasm in the world, and the oropharynx site is one of the most affected. The main risk factors for the development of the disease are smoking and alcohol consumption. Recently, an increase has been observed in the number of cases related to human papillomavirus infection in different regions of the world. **Objective:** To evaluate the prevalence of oropharyngeal cancer cases positive for HPV in patients treated at the Hospital de Cancer de Barretos. **Methodology:** HPV infection status is being evaluated in all patients diagnosed with squamous cell carcinoma of the oropharynx in a 10-year period by immunohistochemistry for p16. **Results:** Of the 1,425 cases raised from the Cancer Hospital Registry, 861 met the inclusion criteria. The IHQ-p16 test was already performed and analyzed for 641 of these cases and a prevalence of p16 expression positive cases was observed in 149 patients (23.2%). Analyzes of association between clinical, demographic and HPV status showed a higher prevalence of HPV positive oropharyngeal tumors in men (78.5%). However, the proportion of HPV positive tumors among women was higher than in men (42.3% in women versus 20.6% in men, p = < 0.0001). In relation to the age group, we observed that patients with HPV positive oropharyngeal tumors are younger, being most of them between the third and fourth decade of life, while the negative ones were more common in the fifth decade of life (p = 0.04). Regarding education, the majority of patients with higher education are positive for HPV, whereas among the negative ones, most had only middle school concluded (p = < 0.0001). **Conclusion:** The prevalence of oropharyngeal tumors associated with HPV appears to be increasing over the years.Regarding the association of sociodemographic data, the female gender seems to have a higher prevalence of HPV and in relation to age group the HPV positive patients appear to be younger.

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TEMÁRIO: TUMORES DE MAMA
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A PROSPECTIVE REAL-WORLD NATIONAL STUDY TO EVALUATE THE EFFICACY AND SAFETY OF ADJUVANT BIOSIMILAR TRASTUZUMAB IN THE TREATMENT OF HER2-POSITIVE BREAST CANCER

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Background: Treatment with anti-HER2 therapy significantly improved survival outcomes in patients with HER2-positive Breast Cancer (BC). In Brazil,

Trastuzumab was the first biosimilar approved in the treatment of patients with breast (any disease setting) and advanced gastric cancer with overexpression of HER2. Increase access to this important treatment may be enhanced with biosimilar approval. The aim of this Real-World study is to assess the efficacy and safety of adjuvant biosimilar trastuzumab in Brazilian patients with early HER2+ BC. **Methods:** This is a national, multicenter, observational prospective, real-world study in a variety of Brazilian institutions. A hundred and seventy adult patients, with diagnosis of early stage HER2-positive breast cancer, who received at least one dose of biosimilar trastuzumab (Zedora) as adjuvant therapy will be included. Patients will be followed for 5 years after the use of biosimilar trastuzumab (Zedora), unless recurrence or death. Safety outcomes will be recorded. Efficacy outcomes include invasive relapse-free survival (IRFS) rate at 18, 24, 30 and 36 months treatment initiation. Given the inexistence of a specific hypothesis to be tested, sample size was based on the accuracy of the two-sided 95% confidence interval (95% CI) for the invasive disease relapse-free survival rate. **Results:** In development countries such as as Brazil, oncology treatments with biological drugs have high costs and represent an import ibarrier to patients access to anti HER2 therapy. The use of biosimilars may result in significant health care savings. **Conclusions:** Considering the HERITAGE study, in which biosimilarity was clearly demonstrated between the reference monoclonal antibody and the biosimilar, we do expect to find the same safety and efficacy profile.

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CHARACTERISTICS AND PROGNOSIS OF TRIPLE NEGATIVE BREAST CANCER PATIENTS IN BRAZIL

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Introduction: Triple-negative breast cancer (TNBC) accounts for approximately 15-20% of breast cancers diagnosed in Brazil, more commonly affects younger women and has been associated with worse clinical outcomes. Anthracycline and taxane-based neoadjuvant chemotherapy (NACT) is a standard treatment option for patients (pts) with localized or locally advanced TNBC. Data supporting this therapy is largely derived from European and North American populations and the evidence providing validation of NACT in Latin American TNBC pts is scarce. **Objective:** To describe the clinical characteristics and outcomes of Brazilian pts with TNBC treated with NACT followed by surgical resection with curative intent. **Methods:** We retrospectively analyzed a cohort of breast cancer pts treated with NACT between 2011 and 2018 in an academic cancer center. Electronic records were reviewed for data on clinical and demographic characteristics, treatment and outcomes. Overall survival (OS) was calculated from the date of diagnosis to date of death or last data record and disease-free survival (DFS) was calculated from the date of diagnosis until the date of recurrence. The Kaplan-Meier method was used for survival analysis. **Results:** We analyzed a cohort of 1991 breast cancer pts treated with NACT, of which 441 were defined as TNBC by immunohistochemistry and were included in the present analysis. Mean age at diagnosis was 53.7 years (range: 24-84) and 34.9% were younger than 50 years. 37.9% were diagnosed in stage II, 62.1% in stage III and 68.9% had lymph node involvement. The rate of complete pathological response (PCR) in breast and lymph node was 29.3%. After a median follow-up of 28 months, the recurrence rate (RR) was 27.2% for the overall population. RR was 5.4% in the group that achieved PCR versus 35.9% in the group with post-NACT residual disease ($p < 0.001$). Median DFS was 7.65 years. Median OS was not reached and 5-year OS rate was 68.5%. There was no statistically significant difference in OS between patients who started NACT with anthracyclines versus those who started treatment with taxane (median OS not reached, $p = 0.203$). **Conclusion:** Our results suggest that Brazilian women are at higher risk of being diagnosed with late stage TNBC than in high-income countries. Clinical outcomes of pts treated with anthracycline and taxane-based NACT followed by surgical resection are comparable to those reported in the literature.

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CORRELATION OF ACTUAL OVERALL SURVIVAL AND SURVIVAL DETERMINED BY ONLINE PROGNOSTIC TOOLS FOR PATIENTS WITH BREAST CANCER: WHAT IS THEIR APPLICABILITY IN CLINICAL PRACTICE?

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Introduction: Breast cancer is a public health problem, given its prevalence and the high costs of treatment. In patients with luminal tumors, the selection of the most effective treatment with fewer side effects is sometimes troublesome, and the evaluation is based on genomic tests which are not largely available due to their high cost. Alternatively, there are online prognostic tools that integrate clinical and anatomo-pathological characteristics to help select the bet adjuvant treatment. **Objective:** To correlate the survival results defined by the Nottingham Prognostic Index (NPI) and PREDICT, prognostic tools, with the actual survival of patients with early breast cancer, exploring their possible applicability in clinical practice. **Methods:** A retrospective study involving 100 patients with early stage breast cancer diagnosed in 2006 at a referral cancer center in São Paulo - Brazil. The NPI and PREDICT tools were used to calculate a 5-year and 10-year survival probability score, respectively, and these results were compared to the patients actual survival. The information was analyzed through descriptive statistics. Survival analysis was performed using the Kaplan-Meier method and Log-Rank test. A *p-val*ue < 0.005 was considered statistically significant. **Results:** In the sample, overall survival (OS) was 91% at 5 years and 82% at 10 years, recurrence free survival (RFS) was 92% at 5 years and 89% at 10 years. Most patients were aged between 45-65 years, invasive ductal histological type, histological and nuclear grade 2, absence of vascular-lymphatic and perineural invasions, free margins. Chemotherapy was used in 56% of patients and hormone therapy in 97%. Pathological features such as greater tumor size, greater number of affected lymph nodes, negative progesterone receptor, vascular-lymphatic invasion and undifferentiated histological grade correlated with lower OS and RFS. The NPI and PREDICT tools presented a satisfactory correlation with the actual survival. In the comparison of tools, PREDICT presented better performance in the sample studied. **Conclusion:** Online tools had a satisfactory correlation with the actual survival of the patients studied in the present cohort. Some pathological variables were associated with worse OS and RFS.

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ESTIMATIVE OF THE IMPACT OF BETTER TREATMENT AND EARLIER DIAGNOSIS ON 5-YEAR SURVIVAL IN BREAST CANCER: A SEER ANALYSIS COMPARING 1988 AND 2011

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Introduction: Breast cancer (BC) is the most frequent among women excluding non-melanoma skin cancer. Its 5-year overall survival (OS) has increased in the last 20 years. One of the reasons is that new therapies have emerged since then. Also, the diagnosis is being made at earlier stages. However, we dont know how much of the increase in OS is due to better treatment and how much is due to earlier diagnosis. The idea of this work is to answer this question. **Methods:** We performed a retrospective analysis of the Surveillance, Epidemiology and End Results (SEER) stat database and compared overall survival and stage distribution for the years of 1988 and 2011. We first calculated the 5-year BC mortality for the years of 1988 and 2011. We subtracted the 5-year OS of 2011 by the 1988 and got the real increase in 5 years OS. After that, we separated the mortality by stage and the stage distribution in each of these years. Then, we simulated how would be the 5-year OS in 2011 if the distribution of stages were the same as in 1988. It gave us the estimated 5-yeas OS for 2011 with constant distribution of stages of 1988. We then subtracted this estimated 5-year OS for 2011 by the actual one of 1988 and got the estimated increase in OS due only to better treatment. Finally, we divided this estimated increase in OS by the real increase in OS and found the percentage of increase due to the development of the treatment. The remaining part must be due to earlier diagnosis. **Results:** In 1988, 76.23% was the real 5-year OS of women with BC. In 2011, the real 5 years OS increased to 84.37%. This represents an absolute increase of 8.14%. We then applied the 5-year OS of 2011 by stage to the distribution of stages of 1988, which indicated that the estimated 5-year OS should be 83.22%, representing an estimated absolute increase of 6.99%. This means that of the 8.14% increase in 5 years OS, 6.99% are due to better treatment, representing a weight of 85.84%. The remaining part must be due to earlier diagnosis, which results in 1.15% of absolute increase and a weight of 14.16%. **Discussion:** Our analysis must be considered a hypothesis generator, regarding to the importance of both increase of treatment efficacy and early diagnosis. Its limitations are the different methods of diagnosis of the periods, the increase in non-breast cancer life expectation and others arising from the SEER database, such as the limited populations origin (USA) and the participants classified as unknown.

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GENERATING REAL WORLD DATA OF BREAST CANCER IN BRAZIL: VALIDATION OF AMAZONA III RESULTS WITH CANCER REGISTRIES

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Introduction: AMAZONA III study (GBECAM 0115) is a prospective real world breast cancer (BC) cohort performed in Brazil that showed a high proportion of patients diagnosed with < 50 years and clinical stage II-III. Differences in terms of the stage at diagnosis were found between public and private health system. The national cancer registry has some limitations such as low population coverage, limited clinical-pathological information and unequal participation among public and private institutions. **Objective:** Validate data from AMAZONA III with the national cancer registry by an Oncology Structured Information System (OSIS). **Methods:** The AMAZONA III included women > 18 years with newly diagnosed between Jan 2016 and March 2018 in 22 sites. OSIS data was collected from Registro Hospitalar de Câncer (RHC) and DATASUS AQ (Chemotherapy Database) including women > 18 years with newly diagnosed BC from 77 sites in São Paulo State. We present a comparison of the patients baseline characteristics at diagnosis between AMAZONA III and OSIS. No formal statistical comparison was performed. **Results:** A total of 2950 patients from AMAZONA III and 10173 patients from OSIS were included in this analysis. Public health insurance coverage was 63.1% vs. 80.8% in AMAZONA III and OSIS, respectively. Mean age at diagnosis was 53.9 (SD 13.4) vs. 56.9 (SD 13.5) years old and age distribution was similar: < = 35 years (8.4% vs. 5.4%), 36-50 years (34.8% vs. 30.7%) and > 50 years (56.8% vs. 63.9%). No difference in age distribution by health insurance was found between the registries. Skin color was similar, white 58.6% vs. 53.6% and brown 34.4% vs. 39.2%. Histologically, 80.9% vs. 82.6% were invasive ductal carcinoma and 6.9% vs. 6.2% lobular, respectively. Clinical stage distribution was 26.3% vs. 25.2% stage I, 41.6% vs. 37% stage II, 27% vs. 27.5% stage III and 5.1% vs. 10.2% stage IV, respectively. In both databases, a high proportion of patients were diagnosed with stage III disease in public vs. private system. BC pathological characteristics were ER and/or PgR positive in 78% vs. 74.7%, HER2 positive in 23.4% vs. 11.6% and grade 2 tumors in 51% vs. 51.6%. **Conclusion:** Observational BC studies produce data similar to national cancer registries with the advantage of collecting more detailed information on BC treatment, relapse and survival endpoints.

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HIGH PREVALENCE OF OVERWEIGHT AND OBESITY IN POST-MENOPAUSAL BREAST CANCER PATIENTS WITH LUMINAL SUBTYPE IN USE OF CURATIVE HORMONIOTHERAPY (HT)

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Introduction: Recent studies have shown that a high body mass index (BMI) (> 24 kg / m2) influences the prognosis of breast cancer patients and the choice of medication in patients with BMI > 30 kg/m2. **Objective:** To determine the prevalence of obese patients with breast cancer based on BMI and to evaluate if there is a difference in the distribution of the overweight population according to the immunohistochemical classification (IHC), menopausal status or treatment modality instituted at the Regional Hospital of Taguatinga (HRT) **Method:** Analysis based on the database from 11/02/12 to 11/06/19 of patients with breast cancer treated in HRT. Evaluation of the prevalence of overweight / obesity in these patients and stratification of the data according to IHC classification, menopausal status and treatment modality. **Results:** Among 3325 patients treated on HRT, 714 (21.5%) are women with breast cancer with a mean age of 53 years +/- 14 years. Regarding weight, only 18% were at ideal weight. In relation to the IHC classification, only 478 (67%) were ductal or lobular carcinomas with complete IHC panel, being 72.6% luminal, 10.8% triple-negative, 10.6% RH+HER2+ and 5.9% RH-Her2+. The majority of patients started treatment with HT (64%) mainly for curative purposes (82.5%) and 63% were in postmenopausal period. We observed an 83% overweight / obesity rate independent of the IHC panel with mean BMI of 28.9 kg/m2 +/- 4. The prevalence of overweight / obesity was 88% in those patients with RH-HER2 + and 86% in those classified as luminal. Regarding menopausal status, 85% of postmenopausal patients (63% of patients) are overweight, while 72% are overweight in premenopausal women (15% of patients). Finally, regarding the type of treatment, prevalence of overweight / obesity was observed in 82% of patients on adjuvant HT and 84% in those in palliative HT. In addition, 56% of all patients are using HT, 90% of which with curative purpose. **Conclusion:** Most patients (83%) are overweight. Furthermore, most of these patients are in menopause period, using curative hormone therapy and express IHC panel compatible with luminal, making this finding more worrying. Thus, more active weight management strategies and medications in overweight / obese

patients are necessary.

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MEASURING BRAZIL'S OUTCOMES OF BREAST CANCER MANAGEMENT GIVEN ITS GDP PER CAPITA: A WORLDWIDE COMPARISON

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Introduction: Breast cancer (BC) treatment vary considerably over different parts of the world. There is a correlation between level of income and efficacy of its management. Therefore, countries of a lower level of income must try to maximize its cost-effectiveness strategies. The ratio of mortality/incidence (RMI) is an indicator of performance in this case. It measures how many women suffering of BC will eventually die from the disease. By modelling the RMI with the gross domestic product per capita (GDPpc) over the different countries, we can then analyze which of them are outperforming and underperforming, in relation to cost-effectiveness. METHODS We got our data from two different sources. The GDP per capita was taken from the World Bank database. The mortality and incidence of breast cancer data were taken from the GLOBOCAN. Our performance proxy was the RMI. We created a model with ordinary least squares (OLS) that tried to explain the RMI by the GDPpc of the countries. After that, we saw that each country had a real RMI and an estimated RMI based on its GDP per capita. Primary objective is to measure the distance between real RMI and estimated RMI (giving the Residues). If the Residue is positive, it means that the country has a real RMI higher than the predicted. This implies that the mortality is higher than expected, given the countrys incidence of breast cancer and GDP per capita. So, the country does not have a good cost/effectiveness performance. If the Residue is negative the result is the oposite. We calculated this Residue for Brazil, and analyzed how the country is performing in terms of management of breast cancer cases. RESULTS We collected data of GDPpc, incidence and mortality of breast cancer for 148 countries. Our regression with OLS yielded the following model: RMI = 1,15279-0,0829404*ln (GDPpc). It says that each 1% of increase in GDP per capita results in predicted decrease of 0,08 in RMI. The higher the GDPpc, the lower the mortality. Brazil had a real RMI of 0,21. The model predicted that, given the income only, Brazil should have an RMI of 0,35. It gives a Residue of -0,13. DISCUSSION The analysis showed that Brazil has a smaller RMI than predicted by its GDP per capita. Therefore, the country has a good cost-effectiveness profile. Our study is a hypothesis generator, and has some limitations, such as the possible heterogeneity of data from the different countries and the analysis limited to the RMI index.

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MICRO-PROGRAM FOR SCREENING BREAST CANCER IN POPULATION OF THE SOUTH CAPIXABA REGION - 5 YEARS OF EXPERIENCE

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Introduction: Mammographic screening allowed mortality reduction of up to 18% in women aged 40 to 50 years, exceeding 30% after 50 years, so it is recommended by the National Cancer Institute (INCA), because the cost-benefit ratio is most favorable in this population. The widespread dissemination by the media of the importance of early diagnosis changed the concept that lack of awareness and fear of cancer were responsible for the large number of women with advanced tumors in Brazil. We currently have difficulty accessing exams and referral centers. **Objective:** To facilitate the population's access to screening tests for breast cancer and the reference center for cancer treatment in the southern region of Espírito Santo. **Method:** Screening women following INCA screening guidelines - age over 50 years and have not had a mammogram for more than one year; partnership between the Reference Center for Oncologic Treatment of the South Capixaba Region, which provided a multidisciplinary medical team and a financial institution that provided additional exams and procedures. **Results:** From 2014 to 2018, women were screened for the release of the exams and contemplated those who met the criteria established by INCA. The annual actions followed an action plan, with three previously defined moments: (1) screening for the release of mammographic examination associated with the medical lecture on breast cancer; (2) performance of examinations; (3) medical consultation with clinical breast examination, delivery of results and necessary referrals. 1989 women were screened and 522 mammograms were released with: 48 birads 0; 151 birads 1; 310 birads 2; 10 birads 3; 3 birads 4 and no birads 5. Sixty-six supplementary ultrasounds (62 single breast ultrasound and 4 magnified ultrasound) and 8 PAAF or surgical biopsies were required. During the actions, three cases of breast cancer were diagnosed in which the patients underwent oncological examinations and treatment with surgery, chemotherapy and radiotherapy. **Conclusion:** Brazil is unable to implement effective mammographic screening due to the lack of economic resources to perform the exams and, especially, the infrastructure for the investigational continuity of the lesions. Performing a small coverage

in the target population were identified three cases of cancer, which required further investigation, demonstrating the need for this access.

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MICRORNA AS MARKER OF DIAGNOSIS AND PROGNOSIS BY LIQUID BIOPSY OF WOMEN WITH BREAST CANCER

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Breast cancer is a worldwide concern due to its high incidence in the female population. The high mortality rate for this neoplasm is mainly related to the development of metastasis. Therefore, the identification of biomarkers that can diagnose early and predict the behavior of the tumor is of special interest to the patients. Currently, liquid biopsy has been gaining ground as a promising tool for the detection of neoplasms, with the benefit of being less invasive and causing minimal discomfort and risk to patients. In recent years the microRNAs, has been studied as potential biomarkers in cancer. Among the circulating miRNAs in breast cancer, we can highlight oncomiR-210. The expression of oncomiR-210 can be induced by hypoxia, and mediates metastasis-induced hypoxia by increasing the expression of angiogenic proteins, such as HIF-1α. The angiogenesis is a process of neoplastic cells to migrate from the primary tumor and colonize other distant sites based on recruitment of new blood vessels from pre-existing vessels. In addition, miR-210 can inhibit the proteolytic degradation of HIF-1α by repression of Von-Hippel Lindau (VHL) protein. The HIF-1α, in turn, stimulates another pro-angiogenic factor, VEGF. The objective of this study was to validate miR-210 in liquid and tissue involved in the angiogenic process, and to evaluate the potential of this as marker of diagnosis and prognosis in breast cancer. Blood and tissue samples were collected at the Base Hospital of São José do Rio Preto, SP, Brasil. In this study, three experimental groups were included: women with Breast Cancer (BC), women with Benign Breast Conditions (BBC) and control group (C).The analysis of microRNAs expression was performed by RT-qPCR and the protein expression of the target genes HIF-1α, VHL and VEGF was performed by immunohistochemistry. As expected, in the plasma samples and fragments of women with BC, our results showed an increase in the expression of miR-210. Furthermore, as potential prognostic marker, the miR-210 was also able to differentiate fragments of BC from good prognosis to poor prognosis. Finally, it was found that the HIF-1α and VEGF proteins showed increased expression in BC, whereas the VHL protein presented decrease. These results may contribute to the use of this promising circulating marker in the early diagnosis and prognosis of breast cancer patients, in addition to the benefit of being detected by liquid biopsy.

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PROGNOSTIC FACTORS OF HUMAN EPIDERMAL GROWTH FACTOR RECEPTOR 2- POSITIVE (HER2+) BREAST CANCER PATIENTS WITH BRAIN METASTASIS IN THE ERA OF TARGETED THERAPY

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Introduction: Patients with advanced human epidermal growth factor receptor 2-positive (HER2+) breast cancer (BC) frequently experience brain metastases (BM), which are associated with poor prognosis and thus excluded from most clinical studies. The advent of HER2-directed therapy resulted in improved survival outcomes, and how managing HER2+ BCBM is a challenge for the oncologist. **Objective:** Determine the clinicopathologic factors associated with the prognosis of patients with HER2+ BCBM, in the scenario of anti-HER2 therapies. **Methods:** This is an unicenter, retrospective analysis of patients diagnosed with HER2+ BCBM between March 2005 and January 2018 . Statistical analysis were conducted with SPSS V.23 using Kaplan-Meier method and Cox regression analysis. **Results:** 97 patients with HER2+ BCBM were included, median age was 50 years old, 31% had stage IV and 16% presented with BM at diagnosis . At the time of the diagnosis of the first BM, 50 (74,6%) patients presented with neurological symptom . Median time from primary BC to BM was 30,9 months. The median survival after developing BM was 28,9 months. Patients with more than 3 BM had significantly shorter overall survival (p = 0,01). 21patients (21,6%) underwent surgical treatment of metastasis in the brain and there was association with survival duration (p = 0,02). Patients treated with radiotherapy (60,9%) had significantly better survival (p = 0,03). Treatment with HER2-targeting agents after BCMB had significantly increased survival (p = 0,022). On multivariate analysis for OS, the presence of more than 3 BM (p = 0,02) and non use of HER2-targeting agents after BCMB (p = 0,01)

were independent prognostic factors. Patients with health ensurance showed a median OS of 30 months vs. 14 months for for public health patients (p = 0.20). **Conclusion:** Our study indicates that HER2+ BC patients with more than 3 BM and treatment without use of HER2-targeting agents after BCMB have a poor prognosis. The best treatment strategy is not yet known and the study of prognostic factors may help to choose a better treatment sequence. In this analysis, the patients with health ensurance presented double the overall survival in relation to public health. These data suggest that differences in access to optimal treatment may play an important role in the management of these patients.

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QUALITY OF LIFE IN PATIENTS WITH LOCALIZED BREAST CANCER TREATED WITH CHEMOTHERAPY

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Objective: To investigate the quality of life of women with breast cancer undergoing chemotherapy. **Methods:** A cross-sectional study was carried out in a specialized cancer treatment institution. It was applied a questionnaire on quality of life (Quality of Life Questionnaire - Breast Cancer 23), translated and validated for the Portuguese, at the beginning and end of treatment. The EORTC QLQ-C30 Scores Manual was used to calculate the scores that varied from 0-100 percentage points from 30 questions. Wilcoxon's test was performed to compare the time distributions. The level of significance was set at 0.05 and the analyzes were performed in SPSS v.25. **Results:** 31 female patients were included in the analysis. 51% of the patients were older than 60 years, 45% were married and 53% had university level. All patients received neoadjuvant or adjuvant chemotherapy for localized breast cancer with curative intent in the following clinical stages: I (22%), II (29%) and III (48%). 64% of the patients received anthracyclines and 87% had chemotherapy with time > 6 months. Average dose intensity for adjuvant treatment is > 90% at our institution. The perceived general quality of life had no statistical difference between the beginning and end of treatment (pre-scores: 78 and post-scores: 71, p = 0.12). As for the functional scale, there was a statistically significant difference with physical worsening (p = 0.001) and emotional improvement (p = 0.033). As for the presented symptoms, there was significant worsening in fatigue (p = 0.001) and loss of appetite (p = 0.04). There was also a tendency to worsening nausea/vomiting (p = 0.06) and constipation (p = 0.07). There was no change in the basal symptoms of pain, dyspnea, insomnia, diarrhea or financial difficulties. **Conclusion:** There was worsening of some baseline symptoms probably related to side-effects of chemotherapy and there was general decrease of the physical functioning; however, patients showed a significant improvement of the emotional functioning that can explain the fact that there is no difference in the general perception of quality of life. The institution has a specialized team of multidisciplinary care for all patients, and protocols to prevent the major toxicities of chemotherapy that certainly contributes to the maintenance of well-being and quality of life during treatment.

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TEMÁRIO: TUMORES DE MAMA
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SEXUAL AND GENERAL QUALITY OF LIFE ASSESSMENT IN PATIENTS UNDERGOING HORMONAL THERAPY FOR BREAST CANCER: DATA FROM A BRAZILIAN PUBLIC ONCOLOGY DEPARTMENT

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Introduction: Approximately one third or more of breast cancer patients will be treated by hormonal therapy (HT). This therapy is not exempt from unwanted side-effects associated with hypoestrogenic state. During hormonal therapy patients can worst their physical symptoms and develop sexual dysfunctions. **Objectives:** To assess how HT can influence patient´s general and sexual quality of life, comparing those in use of tamoxifen (TMX), anastrozole (ANA), or both (ANA/TMX) in sequence.**Methods:** An analytical observational study was performed with 41 female adult patients pre (31,7%) and post-menopausal (68,3%), undergoing HT in our Department. Patients were divided accordingly to used therapy: ANA, TMX and ANA/TMX. They answered two quality of life assessment instruments: Functional Assessment of Cancer Therapy FACT-B, and Female Sexual Distress Scale Revised FSDS-R, and a third set of customized questions on patients perception of their treatment. Chi-square statistical test (Fisher´s test) was applied to verify results. Patients

with psychological conditions or those with impaired questionnaires comprehension were excluded. This study was approved by local ethical committee.**Results:** Patients in use of ANA reported better physical status with fewer difficulties in family-care activities (p = 0,01), less swelling and pain in one or both arms (p = 0,01) and fewer bed-ridden hours due to disease than other groups, while ANA/TMX showed poorest results (p = 0,0003). Pain complaint (p = 0,04), social life (p = 0,01) and sexual satisfaction (p = 0,01) were worse in the ANA/TMX group and lowest in the TMX group (p = 0,04). Acceptance of the disease was larger in ANA/TMX group, possibly due to longer period of treatment (p = 0,04). Results from the remaining questions did not reach level of statistical significance.**Conclusions:** ANA was associated with better physical status, fewer bed-ridden hours and arm swelling. On the other hand, those in use of TMX presented fewer pain rates, better social and sexual lives - confirmed by FSDS-R. As expected, ANA/TMX group reported highest pain complaints, bed-ridden time and impact on both social and sexual quality of life. These data not only confirm that HT plays an important impact on patients personal, social, and sexual lives, but also points at important differences presented between these groups, paving way for the development of more focused and efficient support strategies for all patients using HT for breast cancer.

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SOD2 POLYMORPHISM IS A POSSIBLE PREDICTOR OF EARLY-STAGE BREAST CANCER (HR +, HER2 -) RECURRENCE DURING ADJUVANT TAMOXIFEN

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Introduction: About 30% of early-stage breast cancer patients with hormonal receptor tumors show resistance to tamoxifen during adjuvant treatment, which may result in local or distant recurrence. It is known that the development and aggressiveness of tumors are associated with oxidative stress and antioxidant enzymes such as SOD2. The evaluation of the Val16Ala-SOD2 polymorphism is a possible predictor of recurrence during adjuvant treatment, helping in the therapeutic and prognostic definition of these patients. **Objective:** To evaluate the association between genotypes of SOD2 polymorphism and the risk of recurrence in patients with luminal breast cancer using adjuvant tamoxifen. **Methodology:** Retrospective cohort study of patients with early-stage breast cancer (HR + / Her2-) using adjuvant tamoxifen and follow-up at a reference center. The genotypes AA, AV and VV were evaluated by real-time PCR. The study of the different genotypes were performed through a Cox-regression multivariate analysis of (backward wald) adjusted for age in diagnosis, histology, grade and clinical staging. **Results:** In a sample of 72 patients, 58.21% were older than 40; 85% presented ductal histological type; 29.21% presented histological grade 3 and 30.3% presented clinical stage III. In this cohort, 25 patients (35%) had shown recurrence (12 patients with local recurrence and 13 patients with distance recurrence). The genotypic frequencies of SOD2 were AA = 35%, VV = 35% and AV = 30%. In the multivariate analysis, the presence of the V allele showed a tendency to be a risk factor for recurrence (RR = 2.56 95% CI 0.930-7.07 - p = 0.069). When we stratified the analysis by clinical staging (CS), it was observed that in patients with CS = III, the presence of the V allele was an independent risk factor for recurrence (RR = 7.56 95% CI 2.48-23.01 - $p < 0.001$). **Conclusion:** In general, despite not being statistically significance, the presence of the V allele in early-stage breast cancer patients using adjuvant tamoxifen showed a tendency of recurrence. When only patients with CS = III were analyzed, the presence of the V allele showed significant association with disease recurrence.

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DISSEMINATED MEDULLOBLASTOMA IN ADULT: CASE REPORT

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Case report: Male, 20-year-old, was referred with a nine-month history of relapsing attacks of bilateral visual loss, headache, vomiting, and decreased consciousness. He was treated at a local hospital with high-dose IV steroid pulses and a ventriculo-peritoneal shunt after hydrocephalus findings with increased intracranial pressure, with partial motor improvement following new corticosteroid pulses. A month later, developed tetraparesis, ataxic gait, and convulsion. Brain and Spinal magnetic resonance imaging showed diffuse and hypersignal T2-sequence leptomeningeal enhancement in the frontal and temporal lobes, and diffuse intrarachian meningeal involvement, from the base of the skull to the medullary cone, with heterogeneous enhancement and extrinsic compression. Clinical and imaging characteristics suggested the presence of an embryonic disseminated tumor of the central nervous system (CNS). Biopsy with histochemical study confirmed the diagnosis of Medulloblastoma (MBL). The patient underwent the first stage of chemotherapy treatment with carboplatin and vincristine associated with radiotherapy, and proposed subsequent maintenance therapy with cisplatin, cyclophosphamide, vincristine, according to the study: Outcome of children with metastatic Medulloblastoma treated with Carboplatin during craniospinal radiotherapy: A childrens oncology group phase I/II Study. There was good treatment tolerance, with partial reduction of lesions, incomplete improvement of motor symptoms and vision, and good control of convulsion. **Discussion:** MBL are malignant embryonal tumors of the central nervous system with a propensity to invade and disseminate in the cerebrospinal fluid (CSF). They account for 10%15% of pediatric and 2% of CNS tumors in adults age 20-34 years. They frequently metastasize throughout the brain and spine with nodular or laminar appearance. Patients with MBL are generally treated with surgical resection of the primary mass, followed by craniospinal radiation therapy and chemotherapy. **Comments:** MBL is a highly malignant CNS tumor occurring most frequently in children. In adults, MBL is rare and exhibits distinct features from those occurring in children. As this is a typically pediatric tumor, there are no well-defined protocols for the treatment of MBL in adults, for which pediatric studies are extrapolated. Further studies and evaluations are needed with drug dose adjustments for the adult population for appropriate treatment in these patients.

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IMMUNOHISTOCHEMISTRIAL AND HISTOPATOLOGICAL ASPECTS OF ASTROCYTOMAS IN THE REGION OF MARINGÁ (PR)

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Introduction: Gliomas are the most common neoplasms of the Central Nervous System, representing 80% of the primary malignant tumors. Astrocytomas are 66% of the gliomas and have a global incidence 2,98/100.000 habitants. The immunohistochemistry associated with the histopathological analysis, are the main exams to the classification, according to World Health Organization. There is still a lot to discover about gliomas risk factors, ionizing radiation and use of cellular phones are the most studied of them; allergies are known as a protective factor. Farmers exposed to pesticides may be at risk, an excess incidence of gliomas has been noted on them, in several studies. **Objectives:** The aim of this study is to make a retrospective epidemiological analysis about the types of astrocytomas, studying the most important genes searched in immunohistochemistry, sex ratio, age of incidence, among other elements. Besides, establish a possible relation between the risk factors and the tumors found in the region of Maringá-PR. **Methods:** This research is a transversal, retrospective and descriptive study. 237 anatomopathological and 106 immunohistochemistry exams done between January of 2014 and December of 2018 were analyzed in 3 laboratories localized in Maringá-PR. There were included only tumors diagnosticated as astrocytomas in the period, resulting in 87 tumors with both exams. **Results:** Men are the most affected, representing 71,3% (62 patients), while women are 28,7% (25 patients). The medium age of the patients was 50,6 years (SD±20,4) in general, although the disease appears earlier in men, with 6,8 years of difference (48,7 against 55,5 years). Glioblastoma (grade IV), the most aggressive type of glioma, represents almost two thirds of the total number of astrocytomas (65,5%), followed by diffuse astrocytoma grade II (20,7%). One of the main markers of gliomas immunohistochemistry, IDH-1, was tested in 65 patients, showing a predominance of the wildtype gene (71,6%, 48 patients), which means a worse prognosis comparing to the mutant gene. Furthermore, other markers were included at the study, like GFAP, PS-100, p53, ATRX, OLIG2 and more. **Conclusion:** The data shows a higher incidence in men and the predominance of the glioblastomas, corroborating the literature. However, the number of cases is higher than the expected for the region, what might be related to the fact that Maringá is an area of high agricultural

production and high use of pesticides.

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TEMÁRIO: TUMORES GINECOLÓGICOS
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EXPRESSION OF BRCA1 AND BRCA2 BY IMMUNOHISTOCHEMICAL AND PROGNOSIS IN OVARIAN CANCER: A SYSTEMATIC REVIEW AND META-ANALYSIS

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Introduction: Epithelial ovarian cancer (EOC) is the most lethal gynecological malignancy in the world. BRCA1 and BRCA2 proteins, frequently altered in EOC, are a potential predictive biomarkers for risk assessment, prognostic, and therapeutic response to platinum-based chemotherapy and PARP inhibitors. Despite numerous independent studies using the immunohistochemical (IHC) to assess these proteins expression and the relationship with survival in EOC patients, the results remain controversial. Aim This study aimed to synthesize the scientific evidence regarding the use of IHC for detecting BRCA1 and BRCA2 proteins in EOC and relationship with the prognosis. Method This study followed the PRISMA guidelines. Studies analyzing the BRCA1 and BRCA2 IHC expression in EOC patients were identified through systematic searches in PubMed, Embase, Web of Science, Scopus databases through June 2019. Meta-analyzes of fixed and random effects models were performed with a hazard ratio (HR) and 95% confidence intervals (95%CI) for overall survival (OS) and progression-free survival (PFS). The quality of each study was evaluated by the Newcastle-Ottawa Scale (NOS) and the European Lung Cancer Working Party (ELCWP). Results Of the 44 studies eligible for the systematic review (4,735 patients), 50% of the tumors presented low BRCA1 expression (41 studies) and 61% of BRCA2 (ten studies). Fourteen studies have linked the expression of BRCA1 with survival and were included for this meta-analysis. However, there was no possibility of combining the results of BRCA2 expression. Reduced BRCA1 expression was associated with better OS (HR = 0.77, 95%CI = 0.60-0.99) and PFS (HR = 0.75, 95%CI = 0.59-0.94). The heterogeneity between the survival studies disappeared after the categorization according to the MS110 antibody, 10% cut-off point and high quality by the NOS and ELCWP scales (I2 = 34%,*p* = 0.15). Subgroup analysis using the MS110 antibody and 10% cut-off showed a statistical difference between negative versus positive expression of BRCA1 in favor of low expression for OS (HR = 0.67, 95%CI = 0.55-0.82) and PFS (HR = 0.81, 95%CI = 0.70-0.94). Conclusions Negative BRCA1 expression in EOC patients appeared to have a better prognosis. However, there is no universal standard protocol with translational applicability for the identification of alterations in BRCA1 and BRCA2 proteins by IHC. Larger and prospective studies are required to validate these findings. PROSPERO protocol registration CRD42017070405.

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TEMÁRIO: TUMORES GINECOLÓGICOS
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QUALITY OF SKELETAL MUSCLE AND ADIPOSE TISSUE PREDICTS THE RISK OF TOXICITY TO CHEMOTHERAPY IN WOMEN WITH OVARIAN ADENOCARCINOMA

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Background: Chemotherapy for ovarian cancer causes several toxic effects. To date, studies that associate body composition with toxicity to treatment, especially considering the effect of drug interactions in these patients, remain absent. The presente study aimed to evaluate the association of body composition with toxicity to first-line chemotherapy in women with ovarian adenocarcinoma. **Methods:** This retrospective cohort included 170 women with ovarian adenocarcinoma treated with carboplatin and paclitaxel between 2008-2017, in Rio de Janeiro - RJ. Pretreatment computed tomography (CT) scans were used to quantify the tissues muscular and adipose. The following parameters were evaluated: myopenia, by the skeletal muscle index (SMI) < 38.9 cm^2/m^2; muscular quality, by mean muscle attenuation and high radiodensity skeletal muscle index (HRSMI), both < 75th percentile (< p75); and adipose tissue, assessed by subcutaneous or intramuscular adipose tissue índex < p75. The study's outcomes were grade > 3 toxicity and pharmacological toxicity management (PTT), defined as any dose reduction > 7 days, monotherapy and/or permanent discontinuation due to toxicity. Multiple logistic regression models were adjusted for age > 65 years, performance status (PS), Charlson Comorbidity Index, number of cycles, prescription of anticoagulants and antiemetics, moderate/severe drug interaction, monotherapy and dose reduction in the first cycle. We adopted a significance level of 5%. **Results:** Average age was 56.8 years and 36.5% had myopenia prior to treatment. More than 38.0% had PTT and 43.5% presented any grade 3 toxicity. Roughly 17.0% and 14.0% of patients presented delay and treatment discontinuation for toxicity, respectively. The most frequent toxicities were nausea (69.4%), anemia (61.2%) and leucopenia (56.5%). Moderate/severe interaction occurred in 4.1% of the patients. As for both parameters of adipose tissue, when < p75, were predictors of toxicity grade > 3. HRSMI < p75 was the only muscular parameter predictor independent of this outcome (OR 3.14; CI 1.347.39; $p < 0.01$). However, none of the body composition parameters were able to predict PTT, only PS > 2 and monotherapy in the first cycle were

considered risk factors. **Conclusion:** The pre-treatment body composition, including high radiodensity muscle and adipose tissue, was able to predict grade > 3 toxicity to chemotherapy in women with ovarian cancer and, therefore, should be considered in the antitumor treatment.

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TEMÁRIO: TUMORES GINECOLÓGICOS
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UNDER-EXPRESSION OF HSPA1A, HSPA1L AND TRAP1 GENES HEAT SHOCK PROTEIN IN WOMEN WTIH OVARIAN EPITHELIAL CANCER

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Heat Shock Proteins (HSPs) are implicated in chemotherapy resistance in several tumors. Herein, we evaluated differences in HSPs gene expression profiles in women with ovarian cancer (OC) and correlated this expression and their clinical and pathological aspects of OC patients. 51 patients included were divided into four groups: primary Epithelial Ovarian Cancer (EOC; n = 14), metastatic EOC (n = 11), ovarian serous cystadenoma (n = 7), and no evidence of ovarian malignancy or control (n = 11). The 51 tumor samples obtained were submitted to RNA extraction and reverse transcription. qRT-PCR was performed to compare the expression of TRAP1, HSPB1, HSPD1, HSPA1A and HSPA1L in primary and metastatic EOCs, considering normal ovary as control. Expression of the TRAP1, HSPB1, HSPD1, HSPA1A and HSPA1L genes did not differ among the groups (*p-val*ue > 0.050) .HSPA1A, HSPA1L and TRAP1 were under-expressed in the primary and metastatic EOC groups with HSPA1L showing the lowest expression. TRAP1 expression was higher in tumors at stages I/II than at III/IV. There was no correlation between HSPs expression and age, menarche, parity, period after menopause initiation and CA-125. HSPA1A gene was negatively correlated with the risk of dying of OC. There was no correlation between the expression of the HSP genes evaluated and overall and disease-free survival. We suggest that downregulation of HSPA1A, HSPA1L and TRAP1 could help the evaluation of the clinical prognosis of women with EOC.

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URINARY DIVERSION IN ADVANCED OR RELAPSED CERVICAL CANCER PATIENTS: SURVIVAL ANALYSIS OF A COHORT OF PATIENTS TREATED IN A BRAZILIAN UNIVERSITY CANCER CENTRE

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Background: Urinary obstruction (UO) is a relevant clinical problem that occurs in advanced or relapsed cervical cancer (ARCC), and urinary diversion (UD) is commonly used to address this entity in order to allow optimal treatment. It is yet not known its impact on the survival of these patients. **Methods:** a retrospective analysis of ARCC patients submitted to ureteric stenting (US) or percutaneous nephrostomy (PCN) due to UO at the São Paulo State Cancer Institute, in São Paulo, Brazil, from 2008 to 2017. Primary endpoint was survival associated to UD. Secondary endpoints were the comparison of survival between the procedures and the assessment of prognostic factors. **Results:** 179 ARCC patients were submitted to at least one UD in the study period. 77.3% of them were staged FIGO III or IV, and 85.9% were diagnosed with squamous cell carcinoma of the cervix. Regarding the procedure that improved renal function, 50.3% underwent US and 49.7% were submitted to PCN. 74.5% of them had PS-ECOG 0-1. Median survival in the sample was 17.2 months (95% CI 14.6 - 19.8), and it differed between patients submitted to US and those submitted to PCN with statistical significance (19.68 months vs 13.27 months, respectively, $p = 0.03$). Higher values of pre-procedural creatinine (HR = 1.07 95% CI 1.03-1.12; $p < 0.001$), PCN (HR = 1.45; 95% CI 1.03-2.05; $p = 0.03$), dialysis (HR = 1.97; 95% CI 1.23-3.17; $p = 0.005$) were related to poor survival. In relation to the ECOG-PS, UD did not seem to have an impact in the prognosis of patients with ECOG-PS 1 (HR = 1.51; 95% CI 0.99-2.30; $p = 0.055$), while it seemed detrimental in patients who scored higher: ECOG-PS 2 (HR = 1.92; 95% CI 1.07-3.45; $p = 0.028$), ECOG-PS 3 (HR = 6.10; 95% CI 2.97-12.48; $p < 0.001$), ECOG-PS 4 (HR = 5.01; 95% CI 2.21-11.39; $p < 0.001$). Better survival was associated to higher levels of hemoglobin (HR = 0.84; 95% CI 0.76-0.93; $p = 0.001$), higher levels of albumin (HR = 0.73; 95% CI 0.55-0.98; $p = 0.037$). Survival was not affected by other variables such as histologic diagnosis, ethnicity, age at diagnosis, time to renal function recovery and post-procedure renal function. **Conclusions:** Cervical cancer patients with UO have relatively poor prognosis, and urinary diversion procedures should be carefully considered in patients with good performance status, higher levels of hemoglobin and albumin.

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BRAIN METASTASIS IN PATIENTS WITH ADRENOCORTICAL CARCINOMA IS MORE COMMON THAN PREVIOUSLY REPORTED

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Brain Metastasis in Patients with Adrenocortical Carcinoma is more common than previously reported **Introduction:** Adrenocortical carcinoma (ACC) is a rare and aggressive malignancy. Metastatic ACC has a dismal prognosis with overall survival of less than one year. The most common sites of metastasis are lung, liver, lymph nodes, and less commonly, the bones. Central nervous system (CNS) metastasis is a rare and late event with an estimated incidence of 1-2%, and just a few cases have been reported in the medical literature. **Objective:** To describe the clinical characteristics of patients with ACC treated at Instituto do Câncer do Estado de São Paulo (ICESP) who developed brain metastasis. **Methods:** Medical charts were retrospectively reviewed to identify ACC patients with confirmed brain metastasis. Clinical characteristics and pathologic data were collected, and a literature review was performed. **Results:** Between 2010 and 2019, 54 patients were treated for ACC at ICESP. Six cases with CNS metastasis were identified (11,1%). The median age at the time of diagnosis of ACC was 44 years (range 24-61 mo). The median time between diagnosis of ACC and presentation of brain metastasis was 20.8 months (range 5-53 mo). All six patients had been previously treated with mitotane and four of them with at least one line of cytotoxic therapy. At the time of brain metastasis, systemic diseases were detected in all cases in at least four sites. All patients presented with a single brain lesion. Bleeding was the symptom of presentation in all but one diagnosed without symptoms during CNS screening. Four of six patients presented with CNS recurrence during the follow-up. The median time between CNS metastasis and death was 3.8 months (range 0.4-59.6 mo). In four of six patients, brain metastasis was the leading cause of death. **Conclusions:** In our series, brain metastasis was more common than previously reported. Additionally, brain metastasis was associated with substantial morbidity and was the leading cause of death in most of the affected patients.

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EPIDEMIOLOGY OF THE NEUROENDOCRINE TUMORS OF GASTROINTESTINAL TRACT IN BRAZIL: A CROSS-SECTIONAL STUDY WITH HOSPITAL-BASED CANCER REGISTRIES

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Introduction: Epidemiological data of neuroendocrine tumors of the gastrointestinal tract (NETGI) in Brazil are poorly understood. The present study aims to describe the profile of NETGI in Brazil using the data available from the Hospital-based Cancer Registries (HCR). **Methods:** This is a cross-sectional study with data from HCR of Brazil. The HCR Integrator was used to extract the data. The period evaluated was from 2006-2016 and all Brazilian states were included in the analysis. NETGIs were selected using the following histology codes from the International Classification of Diseases for Oncology (ICD-O): large cell neuroendocrine carcinoma (8013/3); neuroendocrine carcinoma NOS (8246/3); adenocarcinoma with neuroendocrine differentiation (8574/3); small cell carcinomas (8002/3 and 8040/3 to 8045/3); carcinoid tumors (8240/3 to 8249/3); islet cell carcinoma (8150/3); insulinoma (8151/3); glucagonoma (8152/3); gastrinoma (8153/3); mixed exocrine adenocarcinoma (8154/3); VIPoma (8155/3); somatostatinoma (8156/3) and enteroglucagonoma (8157/3). In addition, only topographies of the gastrointestinal tract were considered according to the International Code of Diseases (ICD-10 C15.0 to C21.9). The variables gender, age, place of birth, state of residence, treatment unit status, date of diagnosis, date of first visit, date of first treatment, histology and location of primary tumor were analyzed. **Results:** A total of 3916 new NETGI cases were recorded between 2006-2016. The mean age at diagnosis was 57 years (2-101 years). Females were the most prevalent (52%), with the highest concentration of new cases in the age range between 50-60 years with 25.6% of cases. The cases from the states of São Paulo (SP) (28.7%), Minas Gerais (MG) (14.1%) and Bahia (8.5%) were the most prevalent. However, the states of SP (48.3%), MG (10.1%) and Rio Grande do Sul (7.8%) presented a higher treatment volume of NETGI. The most common topographies were pancreas (24.7%), stomach (22.1%), small intestine (17.0%), colon (15.3%) and rectum (11.2%). As the neuroendocrine carcinoma (53.7%), carcinoid tumor (26.5%), small cell carcinoma (9.3%) were the most frequent histologies. **Conclusion:** In ten years, 3916 cases of NETGI were registered. Neuroendocrine carcinoma histology and pancreatic topography were the most prevalent. Despite the limitations of the study, this is one of the first studies that describes the epidemiology of NETGI in Brazil using the validated national database.

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COLORECTAL CANCER IN BRAZIL: ANALYSIS OF EPIDEMIOLOGICAL PROFILE OF MORTALITY BETWEEN 2008 AND 2017

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Colorectal cancer is a neoplastic disease that is related to genetic and environmental factors such as lifestyle, intestinal polyps, inflammatory bowel disease and some genetic syndromes. **Objectives:** To trace the epidemiological profile of mortality related to colorectal cancer. **Method:** This study consists in a transversal, descriptive and retrospective study using data extracted from National Cancer Institute (INCA) between the years of 2008 and 2017. The variable used were: deaths, regions, sex, age group and mortality rate. **Results:** During the analyzed decade, colorectal cancer was responsible for 148.281 deaths, ranking as the 4th largest cause of death due to malignant neoplasm in men (72,268 records) and the third largest in women (76,013) nationwide. It was noticed that this scenario was characterized by a progressive increase in number of notifications, with a minimum value of 11,953 fatal cases in 2008 and a peak of 18,407 in 2017, representing an increase of 54%, approximately. In this regard, Brazil catalogued a mortality rate of 6,98 out of 100.000 inhabitants, starting from 5.52 to 8,45/100 thousand between the first and the last analyzed year. Regarding to the distribution of deaths by regions, there were 83.426 notifications in the Southeast, 30.237 in the South, 20.958 in the Northeast, 9.429 in the Central West e 4.231 in the North. Furthermore, there is a predominance among elderly, which represents 105.462 deaths (71%). From this total, 35.553 occured between 60 e 69 years, 37.727 between 70 and 79 years and 32.182 between patients with 80 years of age or older. **Conclusion:** Colorectal Cancer can be efficiently screened, once its has a known natural history, which is most often preceded by benign precursor lesions that evolve for about 10 to 15 years. These lesions can be detected through the presence of blood in the fecal occult blood test or through colonoscopy, which presents greater sensitivity and specificity and allows treatment before the evolution to malignant tumor. However, the early detection is neglected by the brazilian public health and this fact reflects in the increase in prevalence and incidence of notifications and deaths due to this neoplasm.

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EPIDEMIOLOGY AND OUTCOMES OF PATIENTS WITH BRAIN METASTASES FROM COLORECTAL CANCER WHO ARE THESE PATIENTS?

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Background: Brain metastases (BM) from colorectal cancer (CRC) are unusual in comparison with other primary sites such as breast and lung. However, an increasing incidence has been reported. The evidence available on the subject is scarce and a better understanding of the disease behavior is warranted. We aimed to characterize the epidemiology and the outcomes of patients (pts) with BM from CRC. **Methods:** A cohort of pts with BM from CRC was retrospectively evaluated. Pts were treated in a single-center between May-2008 and Apr-2019. BM was confirmed by brain computed tomography or magnetic resonance imaging. Overall survival (OS) was calculated from the time of BM diagnosis to death. Kaplan-Meier method was used to estimate survival. Prognostic factors were evaluated using Cox regression. **Results:** A total of 247 consecutive pts were evaluated. Median age was 62.9 years (interquartile range [IQR], 53.8 69.6). For most pts (N = 193, 78%), the primary tumor side was the left; 135 (54%) were metastatic at initial presentation; 124 (50%) were male. Only 14 pts (5.6%) had isolated BM; the majority (N = 194, 78%) had at least two extra-cranial metastatic sites. Ninety-six pts (39%) were RAS wild-type; 68 (27%) RAS mutated; and 83 (34%) were not characterized. Median time from initial diagnosis to BM development was 27.6 months (IQR, 13.1 46.9). BM surgical resection was done for 101 pts (41%) and 140 (57%) received radiation therapy (RT). Median OS was 2.9 months (95% CI, 2.2 3.5). Six-month and 1-year OS rates were 29% (95% CI 23 25) and 13.5% (95% CI 9.2 18.6), respectively. In a multivariable analysis, BM surgical resection (HR 0.49, $P < 0.001$) and RT (HR 0.48, $P < 0.001$) were associated with superior OS, while the number of metastatic sites (HR 1.11, P 0.037) was a negative prognostic factor. RAS status was not associated with OS. **Conclusions:** BM from CRC seem to occur late during disease course and more commonly in pts with a high volume of metastatic disease. A high proportion of primary tumor from the left side was observed. BM from CRC are associated with an extremely poor prognosis. However, selected pts may benefit from BM treatment with surgical resection and RT. A study of molecular features and tumor microenvironment is important for a better comprehension of the disease.

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ESTUDOLONGI(LONGEVOSOCTOGENÁRIOS DIAGNOSTICADOS COM NEOPLASIAS GASTROINTESTINAIS): CARACTERIZAÇÃO EPIDEMIOLÓGICA E CLÍNICA DE PACIENTES TRATADOS EM CENTRO DE REFERÊNCIA EM ONCOLOGIA

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Introdução: O envelhecimento populacional esta causando mudanças na incidência e prevalência de doenças crônicas não transmissíveis (DCNTs). Entre as DCNTs, mais de 60% dos diagnósticos e 70% dos óbitos pelo câncer ocorrem em idosos. Para pacientes octogenários, os estudos com diagnóstico e tratamento são limitados. **Objetivo:** Avaliar o perfil clínico e epidemiológico de pacientes octogenários com diagnóstico de neoplasias do trato digestivo (TGI) (estômago, pâncreas e colorretal). **Método:** Estudo transversal, retrospectivo e unicêntrico, realizado com prontuários de pacientes longevos que realizaram tratamento para o tumor TGI em centro de referência entre 2014 e 2017. Os critérios de inclusão foram: idade ao diagnóstico igual ou superior a 80 anos, diagnóstico de adenocarcinoma, dados clínicos disponíveis no prontuário. As variáveis epidemiológicas estudadas foram sexo, idade, estado civil e tipo de plano de saúde; As variáveis clínicas foram localização e tipo de tumor primário, estadiamento clínico TNM e status após o tratamento. A escala de comorbidade de Charlson (CCI) foi usada para avaliar a gravidade, além da polifarmácia e avaliação do status de desempenho (ECOG). Este estudo foi aprovado pelo Comitê de Ética (#3.052.258). Adotou-se a estatística descritiva, medidas de tendência central e variabilidade para resumir os resultados através do programa SPSS 2.2. **Resultados:** 170 prontuários foram identificados. A idade média dos pacientes foi de 83,3 ± 3,2 anos, com predomínio de mulheres (n = 88,52%). 74% dos pacientes possuíam plano de saúde privado (n = 126) e 31% eram casados (n = 53). O local do tumor primário foi: cólon (n = 70, 41,2%) seguido de estômago (n = 41, 24,1%), reto (n = 32,19%) e pâncreas (n = 27,16%). O estágio clínico IV foi o mais prevalente (n = 62,37%). 61% receberam quimioterapia (n = 103) sendo mais utilizado o folfox, independente do tumor primário (n = 44,43%). 52% dos pacientes necessitaram de cirurgia (n = 89). 57% dos pacientes utilizaram polifarmácia (n = 97), tiveram média de 3 pontos no CCI e 80% ECOG 1. Conclusão: A neoplasia do cólon predominou nesta análise e a maioria dos pacientes recebe tratamento quimioterápico. As comorbidades médias foram 3, indicando que esta população longeva apresenta maior risco de complicações do tratamento do câncer. Este estudo pode orientar pesquisas futuras na identificação de vulnerabilidades, necessidades e adequação terapêutica dos pacientes octogenários. Sem conflitos de interesse

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FACTORS ASSOCIATED WITH UNPLANNED HOSPITALIZATION IN OLDER PATIENTS WITH CANCER OF THE GASTROINTESTINAL TRACT: A PROSPECTIVE COHORT STUDY

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Background: Cancer is a very common chronic disease in the elderly. Gastrointestinal cancers are very common diseases in people in the sixth, seventh and eighth decades of life, when their incidence increases between 14 and 44 times. Unplanned hospitalizations (UH) can interfere with the scheduled treatment of patients and negatively affect quality of life. Hospitalizations of cancer patients are common and expensive and, if unplanned, can disrupt antitumor treatment. **Objective:** To determine the factors associated with the occurrence of unplanned early hospitalization in elderly patients with cancer in the gastrointestinal tract. **Methods:** A quantitative, observational, prospective cohort study was conducted at the Oncogeriatrics Service of cancer teaching hospital. The study population consisted of older individuals (above 60 years of age) attended at the service, with cancer in the gastrointestinal tract, excluding individuals with other types of cancer and those submitted to previous oncological treatment. Sociodemographic and clinical evaluation of the nutritional status, functionality, level of physical activity and the presence of comorbidities were performed through specific questionnaires. Overall survival was estimated using the KaplanMeier method, and survival curves were compared using the Log rank test for categorical variables. A multivariate Cox proportional hazards model was used to select early death risk factors. **Results:** 91 patients were included in the group with UH and 245 in the non-HNP group. The frequency of UH was 86/336 patients (25.6%). In the multivariate analysis, the variables that remained associated with UH were: metastasis (HR: 3.04, 95% CI: 1.67-5.52, $p < 0.001$), incapacity for self-care or work (HR = 3.11, 95% CI: 1,51-5,06 $p < 0.001$) and presence of anemia (HR = 3.11, 95% CI: 1.41-6.87, $p = 0.005$). **Conclusion:** it was possible to verify, after multivariate analysis, that the presence of metastasis, anemia and altered functionality were the variables associated with UH in the elderly with cancer in the gastrointestinal tract. This result brings with it the alert regarding the management of the variables that are potentially modifiable, mitigating the possibility of UH reducing the costs in the treatment and, mainly, improving the quality of life of the patients.

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FEASIBILITY AND SAFETY OF 3-WEEKLY CARBOPLATIN/PACLITAXEL REGIMEN IN ADVANCED SQUAMOUS CELL CARCINOMA OF THE ANAL CANAL (SCCA)

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Introduction: Anal cancer is a rare disease, and there is a lack of phase 3 studies in the advanced setting. Currently, the standard treatment is based on interAACT phase 2 study using Carboplatin (C) (AUC 5, D1q28) plus Paclitaxel (P) (80 mg/m2, D1,8,15q28). This study demonstrated a median OS of 20m, a response rate of 59% and serious adverse events in 36% of patients (pts). However, this regimen requires more infusions and hospital visits than a 3-weekly CP regimen, resulting in high social and financial cost. **Objective:** To retrospectively access safety and efficacy of treatment with 3-weekly CP in advanced SCCA. **Methods:** We performed a single-center retrospective analysis of patients (pts) who received first-line treatment with 3-weekly carboplatin/paclitaxel for inoperable locally recurrent or metastatic SCCA between jun/2011 and jun/2018. Electronic medical records were assessed, and the study data were collected using REDCap®. Survival analyses were estimated with the Kaplan-Meier method and compared by log-rank test. Prognostic factors were evaluated by Cox regression. **Results:** 47 patients were included. Median age was 57 years, 60% (n = 28) were female and 21% (n = 10) HIV positive. At initial tumor diagnosis ,16% (n = 7) had metastatic disease. The majority of pts (n = 42) were treated with paclitaxel (P) 175 mg/m2 plus carboplatin (C) AUC 5 every 3 weeks. The median number of cycles was 4 and dose reduction by toxicity was necessary for 30% (n = 14). Grade 3/4 adverse events were neutropenia 19% (n = 9), anemia 4% (n = 2), fatigue 4% (n = 2), and neuropathy 2% (n = 1). Two pts had interruption due to toxicity and none treatment-related death. 64% of patients benefited from treatment, 4% with complete response. The median overall survival (OS) was 10 months (m). In a multivariable analysis, HIV-positive (HIV+) status (HR 3.1; 95%CI 1.8-8.4; p 0.001) and ECOG 2/3 (HR 3.9; 95%CI 1.2-8.1; p 0.01) showed a negative impact on OS. Median OS was 16m for HIV- vs 4m for HIV+ group; and 20m for ECOG 0/1 vs 4m for ECOG 2/3. **Conclusion:** The present study suggests that 3-weekly CP has similar outcomes to the InterAACT regimen. We suggest that the 3-weekly CP regimen can be an option of treatment in advanced SCCA. Nevertheless, pts who are HIV+ or have ECOG 2/3 had poor outcomes and other treatment strategies should be studied for these pts.

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MEDICAL ONCOLOGISTS PERSPECTIVES ON THE RESULTS OF THE IDEA COLLABORATION

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Introduction: The IDEA Collaboration findings were first presented at the ASCO 2017 Annual Meeting, and ASCO has recently published guidelines on the duration of oxaliplatin-containing adjuvant therapy for stage III colon cancer. However, the adoption of this data in clinical practice is unclear. We hypothesize that there has been significant change in practice patterns as there is an opportunity for de-escalating treatment to prevent unnecessary toxicities, while maintaining the benefit in reducing the risk of recurrence. **Objective:** We aimed to characterize medical oncologists perspectives towards the results of the IDEA Collaboration and evaluate how IDEA impacted prescribing patterns of adjuvant FOLFOX/CAPOX in colon cancer. IDEA aimed to evaluate whether 3 months of adjuvant chemotherapy was non-inferior to 6 months. **Methods:** A list of questions developed by 4 medical oncologists regarding IDEA results were formulated and distributed online to gastrointestinal medical oncologists from around the world. Descriptive statistics and chi-square tests were utilized to summarize information. **Results:** Of 174 responses, 145 were complete and analyzed. Responses were obtained globally from South America (53%), U.S./Canada (28%), Europe/Australia/New Zealand (12%), and Asia (7%). Most clinicians (98%) were aware of the IDEA study. Prior to IDEA, clinicians preferred FOLFOX over CAPOX (81% vs. 19%). Subsequent to IDEA, 55% of clinicians preferred CAPOX over FOLFOX (OR 5.0, 95% CI 3.0-8.5, $p < 0.01$ compared to pre-IDEA). Two-thirds (67.6%) of responders tailor duration of adjuvant therapy based on risk stratification. Most oncologists (76%) are more willing to discontinue oxaliplatin early if toxicities develop after the results of IDEA. Half of responders (50%) found IDEA increased their confidence in decision-making for adjuvant treatment; 36% were unchanged and 15% indicated decreased confidence. Less than half (48%) are comfortable communicating the study results and the concept of a non-inferiority trial with patients. **Conclusions:** IDEA appears to have shifted clinician preference from FOLFOX to CAPOX for adjuvant therapy and most clinicians now utilize a risk stratified approach in determining duration of adjuvant therapy. Patient education resources may facilitate better communication of IDEA results to patients.

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NEUTROPHIL-LYMPHOCYTE RATIO AND NUTRITION STATUS ARE CLINICALLY USEFUL IN PREDICTING PROGNOSIS IN PATIENTS WITH COLORECTAL CANCER

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Background: Colorectal cancer (CRC) is the third most malignant neoplasm and the fourth leading cause of cancer death in Brazil. Changes caused by cancer lead to modification in protein-energy metabolism, exacerbated pro-inflammatory state, immune depression and, moreover, affect the ability to ingest or absorb nutrients properly. Despite the substantial improvement in early diagnosis and treatment, the prognosis of patients with CRC remains unsatisfactory. neutrophil-lymphocyte ratio (NLR) and nutritional status may provide an independent prognostic value in CRC. Thus, aim of our study was to investigate the influence of nutritional status classification and NLR on the long-term survival of patients diagnosed with CRC. **Methods:** A retrospective analysis was conducted in patients with CRC in a Brazilian reference cancer institute. The population of the study was composed of patients in CRC pre-treatment, from 20 years of age, of both sexes. The independent variables related to nutritional status evaluated were body mass index (BMI) and weight loss (WL) classification. It was considered overall survival (OS) in 5 years old. Kaplan-Meier curves were conducted for survival analyses. Cox multivariate model also was used to measure the adjusted effects. The results were considered statistically significant when $p < 0.05$. **Results:** A total of 148 patients were included in the study. The most prevalent nutritional status was overweight/obesity (43.2%) and severe WL had an important frequency (27.0%). Sixty-seven subjects (45.3%) had NLR ≥3. Analysis of the survival curve showed that the NLR above the cutoff point was significantly associated with the lower OS ($p < 0.001$). Regarding nutritional status, there was a higher survival rate for overweight/obese patients ($p = 0.002$) and a lower survival rate among subjects with severe WL ($p = 0.009$). Multivariate Cox regression demonstrated that NLR ≥3 (HR: 3.639, $p = 0.001$; 95% CI, 1.7087.771) was identified as independent poor prognostic factors for OS. On the other hand, patients without WL (HR: 0.367, $p = 0.040$; 95% CI, 0.1410.954) and overweight/obesity (HR: 0.260 $p = 0.003$; 95% CI, 0.1060.639) presented better prognostic. **Conclusion:** NLR, WL, BMI assessments can be promising prognostic indicators in CRC patients. These tools are easy to measure, inexpensive and may be useful in improving decisions about therapeutic protocols and the survival perspectives in patients with CRC.

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PATIENTS WITH SQUAMOUS CELL CARCINOMA OF THE ANAL (SCCA) AND HIV INFECTION TREATED WITH DEFINITIVE CHEMORADIOTHERAPY (CHRT): A MULTINATIONAL RETROSPECTIVE COMPARATIVE STUDY

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Introduction: The definitive treatment for localized SCCA is ChRT in combination with infusional 5-FU. A meta-analysis of published studies from the past decades conducted by our group showed significantly higher dermatological and hematological toxicity and rates of disease-free survival and overall survival at three years significantly lower in HIV-positive patients (pts). We aimed to compare treatment outcomes between HIV-negative and positive pts, (all under antiretroviral therapy) according to the chemotherapy regimen (Nigro versus ACT-II) and treated in the recent years. **Methods:** Retrospective multinational comparative cohort of consecutive pts with histological diagnosis of SCCA and localized disease who received definitive ChRT. The primary endpoint was complete response (CR) rate defined by absence of clinical and radiological evidence of disease at 6 months. Second endpoint was DFS rate in 3 years, time to achieve CR, and prognostic factors of improved outcomes. **Results:** A total of 185 patients with SCCA were included: 43 (23.2%) were HIV-positive and 142 (76.8%) were HIV-negative. HIV-positive pts were more commonly men: 28 (65.1%) vs 27 (19%) ($p < 0.001$) and had clinical stage III: 27 (62.8%) vs 75 (52.8%) ($p = 0.249$). The overall CR rate was 67.4% vs 91.5% for HIV-positive and negative pts, respectively ($P < 0.001$). Among pts who achieved a CR (N = 159), the rates of CR for HIV-positive vs negative pts were, respectively: 27.9% vs 82.4% at 6 months and 39.5% vs 9.2% after 6 months post ChRT ($p < 0.001$).The overall CR rates of

HIV-positive pts were 50% (6 out of 12) with ACT2 and 69.5% (16 out of 23) with Nigro. For HIV-negative, the CR rates were 92.5% (37 out of 40) for ACT2 and 91.4 % (75 out of 82) for Nigro. The rate of colostomy was higher in the HIV + group 23.2% vs 16,1% in the HIV negative (p = 0.199). In a median follow-up of 47.8 months the time to achieve CR was 7.8 (95% CI:5.7-10) months for HIV-positive vs 4.8 95% (CI:4.54-5.25) months for negative HIV, (p < 0.001). The DFS rate at 36 months was 61% and 78% for HIV-positive and HIV-negative, respectively (p = 0.023). **Conclusions:** HIV-positive pts treated with more modern regimens had inferior DFS, higher rates of colostomy and delayed CR. While HIV-negative pts present similar outcomes with Nigro or ACT2 regimen, our data suggest that HIV-positive pts present inferior outcomes ACT2.

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CÓDIGO: 87302

A DECADE OF SYSTEMIC TREATMENT FOR HEPATOCELLULAR CARCINOMA: EXPERIENCE OF A TERTIARY CENTER

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Introduction: A decade ago, sorafenib became the first agent to achieve a survival improvement in patients (pts) with hepatocellular carcinoma (HCC) and remains the cornerstone of systemic therapy. Recently, novel drugs have shown positive results, although they are still not widely available. Clinical trials strictly include pts with preserved liver function and good performance status (PS), what not always mirror the profile from real-life practice. In view of the potential incorporation of novel agents, data from clinical practice may support therapeutic decisions. We aimed to describe a decade of HCC treatment, focusing on clinical features, outcomes and prognostic factors. **Methods:** A database of HCC pts from Instituto do Câncer do Estado de São Paulo was analyzed. Descriptive statistic was used for categoric variables; overall survival (OS) was estimated by Kaplan Meier and compared by log rank. Cox regression was used to define prognostic factors. **Results:** From 2008 to 2018, 239 pts started sorafenib. Median age was 61.7 years (18.9-83.1), 112 (48.1%) had hepatitis C, 45 (19.3%) had hepatitis B and 36 (15.5%) had alcoholic hepatopathy. The majority presented BCLC-C (n = 197, 83.7%) and Child-Pugh (CP)A (n = 205, 86.5%). Median treatment duration was 4.9 months (1.1-23.8) and median OS was 9.8 months (95%CI 7.9-11.6). Considering only the subgroup with CPA and ECOG-PS 0/1 (n = 201), the median OS was 10.4 months (95%CI 8.5-12.5). CPA vs B (p = 0.006); neutrophil-to-lymphocyte ratio < 3.5 vs ≥ 3.5 (p < 0.0001); decrease of ≥ 25% in alpha-fetoprotein vs no decrease (p = 0.004) and disease control vs progression (p = 0.006) were independently associated with better OS. At sorafenib discontinuation, 48.9% of the patients were CPA and 51.1% had ECOG-PS 0-1. Second-line therapies were provided for 52 (21.7%) patients. Median post-progression OS (from sorafenib discontinuation) was 4.5 months (95%CI 3.5-5.4). CP B-C vs A (p = 0.004), PS 3-4 vs 0-2 (p = 0.04) and discontinuation due to progression vs toxicity (p < 0.001) were associated with worse post-progression OS. **Conclusion:** Our cohort presented similar OS to that reported in phase III studies. At progression, half of the patients would not meet inclusion criteria for trials, mainly due to clinical and liver function deterioration. Radiologic response, alpha-fetoprotein, hepatic dysfunction and biomarkers of inflammation can help to predict outcomes and select pts that could potentially benefit from second-line therapies.

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CÓDIGO: 87159

DOES HEPATOCELLULAR CARCINOMA SECONDARY TO NASH HAVE A BETTER PROGNOSIS AFTER LIVER TRANSPLANT?

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Background: The number of Non-alcoholic steatohepatitis (NASH) cases has been increasing in Western countries as Hepatocellular carcinomas (HCC) etiology. However, patients with NASH cirrhosis seems to undertake less intensive screening for HCC than the rest of other cirrhosis etiologies. Although discovering more advanced tumors at diagnosis is intuitively expected, retrospective studies suggest more indolent biological behavior of HCC in this subpopulation.

Objectives: To evaluate the association between NASH-HCC, histopathological findings of the explant and risk of tumor recurrence (TR) after liver transplantation (LT), comparing them with patients with HCC secondary to other etiologies. **Methods:** Retrospective cohort study of 212 patients submitted to LT for HCC at a reference center between 2000 and 2016 and followed up to 12/31/2018. Patients with NASH were considered those with compatible clinical and laboratory characteristics, suggestive histological findings of the explant and absence of other risk factors. **Results:** Among HCC etiologies, 15% of the sample were NASH patients. Dividing the follow-up period into three times, an upward trend was observed in NASH-HCC cases (8.9% up to 2008, 13.6% between 2008-2012 and 19.8% between 2013- 2016, p = 0.15). Median age in NASH group was 6.5 years higher than non-NASH group. Significant associations between cases of NASH-HCC and females (p = 0.01), age > 60 years old (p = 0.001), BMI > 30 kg/m2 (p = 0.004) and alpha-fetoprotein (AFP) levels < 10 ng/mL (p = 0.003) were found. Regarding tumor characteristics of the explant, there was no association with staging according to the Milan criteria or with histological grade. A lower frequency of vascular invasion was observed in NASH cases (p = 0.07). None of NASH patients had TR after a median follow-up of 29.2 (IQR 4.47-66.22) months post-LT (p = 0.006). **Conclusion:** In this sample, we found an association with data of lower tumor aggressiveness and lower expression of AFP, besides a tendency to less vascular invasion in the explant. In spite of being a population with greater median age and more comorbidities due to metabolic syndrome, there were no cases of TR within two years, being consistent with the hypothesis that NASH defines a more indolent HCC subtype. Nevertheless, screening for HCC should be more intensive, in regards to the clinical frailty of these patients due to more advanced age and multiple conditions, difficulting surgical treatment, when needed.

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FOLFOX VERSUS FOLFIRI IN THE SECOND-LINE SETTING OF METASTATIC BILIARY TRACT CARCINOMA (MBTC): A RETROSPECTIVE ANALYSIS

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Background: Metastatic biliary tract carcinoma (mBTC) patients are treated in first-line with gemcitabine plus plantinum combination therapy, but survival is poor. Recently, FOLFOX has been shown to be active in second line as compared to active symptom control. However, resistance to a platinum component may impair second-line outcomes and impact therapy choice in real-life practice. **Methods:** This was a retrospective study of patients treated at a large cancer center. All patients had mBTC and underwent second-line FOLFOX or FOLFIRI. Our objective was to compare overall survival (OS) and time to treatment failure (TTF) between regimens. Kaplan-Meir and log-rank were used to estimate survival and possible differences. Qui-square and Fisher tests were used to compare categorical variables. **Results** Between June/2011 and June/2017, thirty-eight patients were identified. Eighteen and twenty pts underwent FOLFOX and FOLFIRI, respectively. Median follow-up was 17.2m (95% IC 13.7 20.8). Cisplatin plus gemcitabine was used as first-line in 97.4%. Median age was 57.5y for FOLFOX and 60.5y for FOLFIRI. ECOG was 0/1 in 72.2% and 75% (p = 1.0) for FOLFOX and FOLFIRI, respectively. Intrahepatic cholangiocarcinoma was the most prevalent site (FOLFOX 70%, FOLFIRI 50%); four patients had primary gallbladder in the FOLFOX cohort versus none in FOLFIRI (p = 0.092). Liver metastases were present in 77.8% and 55% in each cohort (p = 0.18), respectively. More patients in the FOLFOX regimen had more than two sites of disease (83.3% versus 35%, p = 0.004). Overall survival was numerically higher in the FOLFIRI cohort (6.76 versus 4.0m, p = 0.29). TTF was 2.79m and 2.33m for FOLFOX and FOLFIRI respectively (p = 0.93). **Conclusion:** In our retrospective analysis FOLFOX and FOLFIRI had similar efficacy. FOLFIRI had a slightly better OS, but FOLFOX patients had more unfavorable prognostic characteristics. Second-line FOLFOX offers similar OS as compared to the ABC-06 trial. TTF were low for both regimens, which demonstrates urgent need of better treatment options for these patients. FOLFIRI should be better evaluated in prospective trials as an alternative to platinum intolerant or resistant patients.

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CÓDIGO: 87329

IMPACT OF SERUM ALPHA FETOPROTEIN LEVELS ON THE RISK OF HEPATOCELLULAR CARCINOMA RECURRENCE AFTER LIVER TRANSPLANTATION

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Introduction: Despite restrictive criteria for the selection of liver transplant (LT) candidates for hepatocellular carcinoma (HCC), 20% of patients evolve with tumor recurrence (TR), being post-recurrence survival in two years less than 10%. Based on purely structural data, the Milan criteria (MC) are not able to predict the biological behavior of such tumors. Alpha fetoprotein (AFP) is a biomarker that has a prognostic impact on HCC. It is argued that high levels of AFP are related to a higher burden of disease and/or more aggressive histological subtypes. **Objectives:** To assess the association between AFP serum levels in patients with HCC who underwent LT, explants histopathological data and TR risk. **Methods:** A retrospective cohort study comprised 192 patients submitted to LT for HCC at a reference center, between 2000 and 2016, with outpatient follow-up after transplantation until 12/31/2018. Thirty-five obitum cases were excluded from the survival analysis in the first three months after LT, thus 153 patients were analysed. **Results:** The sample comprised mainly male patients (76%), with a median age of 62 years old. The main etiologies were HCV (52.6%), HBV (11.9%) and alcohol (16.6%). Bridging treatments were performed in 79% of patients, with median list time of 89 (IQR 35-140) days. AFP ranged from 0.7 to 34,000 ng/mL, median of 19.3 (IQR 6.8-142.4) ng/mL. Normal AFP were verified in 35% of cases, and other 35% presented AFP between 10-100 ng/mL, 18.7% between 100-1000 ng/mL and 10.4% greater than 1000 ng/mL. In the explant analysis, 29.8% of tumors were outside the MC and 44.6% presented with vascular invasion, with an association between AFP > 1000 ng/mL and vascular invasion (p = 0.04). There was no association between AFP and the MC, nor with histological grade. TR risk after LT was progressively higher according to the pre-LT AFP extract (AFP 100-1000 ng/mL: HR 3.59, CI 1.38-9.31; AFP > 1000 ng/mL: HR 4.97, CI 1.8-13.7). In the multivariate analysis, AFP levels > 100 ng/mL persisted as an independent risk factor for TR. The median survival after recurrence was 10.1 months. There was no association between AFP after TR with post-recurrence survival. **Conclusion:** Although 35% of HCC-transplanted patients had normal AFP in pre-LT, AFP > 100 ng/mL was associated with higher risk of post-LT TR. Post-LT AFP monitoring, on the other hand, should not be used as the only way to monitor TR, since 41.2% of the recurrences did not revealed marker elevation.

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CÓDIGO: 88399

INCIDENCE AND MORTALITY: LIVER CANCER IN LATIN AMERICA

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Liver cancer is the sixth most commonly diagnosed malignant disease in the world and the fourth leading cause of cancer death in the world in 2018, with about 841,000 new cases and 782,000 deaths annually. Estimates indicate that there will be about 18.1 million new cases of cancer. In both sexes, liver cancer represents 8.2% of this total for mortality. **Objectives:** To analyze trends in incidence and mortality for liver cancer in Latin America. **Methods:** A time series ecological study with incidence data from the International Agency for Research on Cancer (IARC) and mortality data from 17 countries of the World Health Organization (WHO). **Results:** The highest incidence rates for liver cancer were observed for both sexes in Quito Ecuador in the age group 0-39 years. There was a tendency of stability for the other analyzes by gender and age group and no trend of reduction. The lowest incidence rates are observed in the age group from 40 to 59 years for both sexes, being in Quito, Ecuador for males and in Goiânia, Brazil for females. For mortality trends in the age group of 60-74 years, Nicaragua had the highest rate of increase trend for both sexes; the others showed increase, stability and reduction. **Conclusion:** The trend of incidence of liver cancer in Latin America for the studied countries showed stability in most and no reduction. For the mortality trend of the 17 countries analyzed observed stability and reduction in trends, except for Brazil, El Salvador and Nicaragua, which showed increase for males, and Panama for females.

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PRACTICE PATTERNS OF PATIENTS WITH HEPATOCELLULAR CARCINOMA (HCC) RECEIVING TRANSARTERIAL CHEMOEMBOLIZATION (TACE): FINAL ANALYSIS OF OPTIMIS IN LATIN AMERICA

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Introduction: OPTIMIS was a global, prospective, non-interventional study evaluating outcomes and practice patterns in patients with HCC treated with TACE, followed or not followed by sorafenib. Using protocol-specified criteria in the global cohort, we have observed longer OS in propensity score matched cohort with early start of sorafenib (16.2 months [n = 31)] versus those without (12.1 months [n = 62]). In order to understand local treatment patterns, we present results from Latin American patients from OPTIMIS. **Methods:** OPTIMIS enrolled patients with HCC for whom a decision to treat with TACE was made at study entry. TACE ineligibility was defined by study protocol-specified criteria and data were analyzed using descriptive statistics. Radiologic tumor response to each TACE treatment was determined by investigator assessment. Regional analysis of OPTIMIS was conducted in patients from Latin America, including baseline characteristics, TACE treatment patterns, and response rates. **Results:** Of the 1650 patients enrolled globally who received TACE, 19 were from Latin America (n = 12 Brazil, n = 7 Mexico). Of those, 5 patients (26%) were TACE ineligible at inclusion, 4 (21%) had an ECOG PS ≥1, 5 (26%) were BCLC C/D, and 7 (37%) were ChildPugh B/C. Nine patients (47%) received only 1 TACE, 6 (32%) had 2 TACE, and 4 (21%) received 35 TACE. Complete and partial response to first TACE was achieved by 10 patients (5 patients [26%] for each). **Conclusions:** In this real-world study, the results from Latin America were generally consistent with those reported globally. In Latin America and globally, a proportion of patients received TACE despite being ineligible at inclusion. Our data highlight the need to evaluate TACE practice in HCC to ensure patient eligibility for subsequent effective therapies. Clinical trial registration: NCT01933945

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TEMÁRIO: TUMORES UROLÓGICOS - NÃO PRÓSTATA
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ANÁLISE DA EXPRESSÃO DOS RECEPTORES TOLL- LIKE 2 E 9, E DAS VIAS DE SINALIZAÇÃO INTRACELULAR MAPKP38 E NFKBP65 NO CARCINOMA ESCAMOSO DE PÊNIS

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Modulation of the inflammatory process by TLRs may be a key factor in tumor development and progression, inducing both pro-tumor and anti-tumor responses, often through the regulation of NF-κB signaling and subsequent growth factor and anti-apoptotic proteins production. The magnitude and duration of TLR activation are critical for the development of a pro-tumor inflammatory state or anti- tumor response. To evaluate the expression of Toll-like receptors 2 and 9, and the intracellular signaling pathways NF-κBp65 and MAPKp38 in squamous cell carcinoma of the penis. 38 male patients with penile cancer, aged ≥ 18 years, were included. As a control group, 15 healthy men were included. Serum protein concentration was determined by the flow cytometry technique. For statistical analysis, the Mann-Whitney tests and Spearman's correlation were used. It was considered significant $p < 0.05$. In peripheral blood, there were more leukocytes expressing TLR2 and MAPKp38 in patients, compared to healthy controls ($p = 0.002$ and $p < 0.0001$, respectively), whereas leukocytes expressing TLR9 and NFκB were more numerous in healthy controls ($p = 0.03$ and $p = 0.03$). In neutrophils, there was a greater number with expression of NFκBp65 and MAPKp38, in controls ($p = 0.001$ and $p < 0.0001$). In monocytes, there were the highest number of cells expressing TLR9 and MAPKp38 in patients with penile cancer ($p = 0.003$ and $p = 0.01$). In patients with tumors > 3.5 cm, there is a greater number of total leukocytes expressing TLR9, NFκBp65 and MAPKp38 ($p = 0.01$, $p = 0.008$ and $p = 0.03$, respectively), a higher amount of neutrophils with expression of TLR2 and NFκBp65 ($p = 0.0008$ and $p = 0.01$).In tumors ≤ 3.5 cm, a higher amount of monocytes expressed NFκBp65 ($p = 0.02$).There was a higher number of monocytes and neutrophils with TLR9 expression ($p = 0.009$ and $p = 0.0003$) . In tumor tissue, there was a greater expression of TLR9 and NFκBp65 in patients with tumors ≤ 3.5 cm ($p = 0.02$).In the tumor tissue, there was a moderate positive correlation between TLR2 and TLR9 ($r = 0.65$, $p = 0.0009$) and TLR9 and NFκBp65 ($r = 0.60$; $p = 0.003$), and a high positive correlation between TLR2 and NFκBp65 ($r = 0.78$; $p < 0.0001$). There are changes in blood levels of TLR2, TLR9, NFκBp65 and MAPKp38, at different levels, depending on the cell type, and on tumor tissue that may function as prognostic and predictive factors of treatment for patients with penile SCC.

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CONVENTIONAL-DOSE CHEMOTHERAPY FOR METASTATIC GERM-CELL TUMORS PATIENTS WHOM RELAPSED AFTER CISPLATIN-BASED FIRST-LINE TREATMENT

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Background: Patients with relapsed germ-cell tumors (GCT) can still be cured with second-line treatment regimens, however the optimal rescue

strategy remains a matter of debate. High-dose chemotherapy (HDCT) has shown impressive results in unselected patients, and may be a reasonable option for selected cases. Nevertheless, conventional dose chemotherapy (CDCT) may still be a good option for selected cases. **Methods:** We performed a retrospective observational study, analyzing medical data of 57 GCT male sex patients treated with CDCT after relapsed a first-line cisplatin-based treatment from 2000 to 2015 at the Brazilian National Cancer Institute. **Results:** The median age was 28 years (range 15 to 49). 26 patients (46%) were afro-Brazilian, 45 (79%) Non-seminoma and, 53 (93%) harbored primary testis tumors. 14 patients (25%) had bone, liver or brain metastasis at relapse, and in 35 (61%) the progression-free interval (PFI) after first-line was < 3months. The International Prognostic Factors Study Group (IPFSG) risk classification at relapse for very-low/low, intermediate and high/very-high risk were 8 (14%), 25 (44%), 24 (42%), respectively. After a median follow-up of 8 years, the 2-year PFS was 30% (95% IC, 20 % to 45 %) and the 2-year overall survival (OS) was 34% (95% IC, 23% to 49%). PFI < 3m after first-line (HR 2,38; p < 0,005) and AFP > 1000 at relapse (HR 2,38, p < 0,023) were prognostic factors for PFS and OS. The 2-year PFS and OS for IPFSG risk classification very-low/low, intermediate and high/very-high risk were 75% and 73%, 28% and 32%, 18% and 24%, respectively. **Conclusion:** In patients with relapsed GCT and very-low/low risk disease by the IPFSG classification, CDCT is a reasonable treatment strategy bearing two-thirds of cure rate in this cohort. On the other hand, for intermediate and high/very-high risk groups, the low rate of cure must preclude this type of treatment. HDCT strategies should be pursuit in this subset of patients.

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CÓDIGO: 87890

INFLUENCE OF HLA CLASS I AND TUMOR NEOANTIGENS IN TREATMENT RESPONSE WITH BCG (BACILLUS CALMETTE-GUÉRIN) IMMUNOTHERAPY IN NON-MUSCLE INVASIVE BLADDER CANCER (NMIBC)

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Around 70-80% of bladder cancer cases correspond to non-invasive forms (NMIBC). NMIBC treatment is surgical, followed by adjuvant immunotherapy with intra-vesical applications of BCG vaccine in cases with a high or intermediate risk of disease recurrence. It is hypothesized that BCG immunotherapy stimulates the patient's immune response, which in turn activate lymphocytes supposed to recognize tumor neoantigens and eliminate cancer cells. About 30-40% of patients do not respond to BCG treatment and relapse, also 10-25% progress to invasive forms (MIBC), and to date, there are no predictive biomarkers of BCG response in the clinical practice. MIBC cases previously treated with BCG are enriched for mutations in HLA Class I genes, evidence that NMIBC severity is related to the specificity of the antigen presentation mechanism. Surprisingly, NMIBC data correlating the response to BCG and tumor mutation burden is controversial in the literature. For distinct tumor types, recent works have demonstrated that neoantigens with higher homology to infectious disease-related molecules are biomarkers of better clinical outcomes; however, this analysis has not yet been adopted to explain progression and response to treatment in NMIBC. We hypothesize that (i) the number of neoantigens similar to microbial epitopes is predictive of response to BCG and (ii) somatic and polymorphic HLA variants modulate peptide molecular affinity, interfering in neoantigens recognition and immune response. We HLA-typed and quantified neoantigens from exomes of 35 primary tumors of BCG treated patients (17 sensitive and 18 resistant) using bioinformatics tools. Excluding synonymous, we observed that not all mutations are immunogenic: on average 59.46% are neoantigens (40.4-94.3% per patient). There is a significant correlation between total tumor mutations and amount of predicted neoantigens (Pearson correlation, *p-val* < 2x10e-16). Moreover, sensitive tumors have more neoantigens compared to resistant ones (Wilcoxon test, *p-val* = 0.03), evidencing a significant association between quantity of neoantigens and greater relapse-free survival (Log-rank test, *p-val* = 0.017), a fact not yet demonstrated for NMIBC. We are currently employing a mathematical model to estimate the degree of similarity between tumor peptides and pathogen epitopes. Finally, we did not observe a significant correlation between BCG response and loss of diversity in tumor HLA-A, B, or C (Log-rank test, *p-val* = 0.52).

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INFLUENCE OF TOXICITY ON EFFICACY OF 1ST LINE TKI IN METASTATIC RENAL CANCER IN ELDERLY PATIENTS

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Introduction: Previous trials have shown a positive relationship between on-target toxicities and efficacy of tyrosine kinase inhibitors (TKI) in metastatic renal cell carcinoma (mRCC). Those toxicities could be potentially deleterious in elderly patients with the loss of this benefit. **Objectives:** We aimed to analyze the impact of any grade hypertension (HAS), hypothyroidism and hand foot syndrome (HFS) on efficacy outcomes of elderly mRCC patients. **Methods:** We retrospectively reviewed all elderly mRCC patients treated with 1st line TKIs at a single institution (2007 2018). Descriptive statics were used to characterize the population. Survival was estimated by Kaplan-Maier method, prognostic factors adjusted by Cox regression model. Toxicities were evaluated using the Common Terminology Criteria for Adverse Events (CTCAE) v4.0. Elderly was defined as having ≥65 years of age. **Results:** 64 patients were included, with median age of 70.5 years old. Most had clear cell histology (84.4%), good/intermediate IMDC risk (79%), prior nephrectomy (86.4%), ≥2 metastatic sites (75%) and ECOG 0-1 (71.9%). 60.9% were treated with Sunitinib, 35.9% with Pazopanib, and 3.1% with Sorafenib in the first line setting. Any grade HAS was observed in 24 patients (37.5%), Hypothyroidism in 22 (34.4%) and HFS in 23 (35.9%). On univariate analysis, patients with any grade HFS had better progression free survival (PFS) 12.6 versus 5.8 months (HR 0.42, 95% CI 0.22 to 0.77), as well as patients with any grade Hypothyroidism -12.4 vs 6.1 months (HR 0.55, 95% CI 0.31 to 0.97). Any grade HAS did not reach statistical significance 12.7 vs 7.3 months (HR 0.65, 95% CI 0.37 to 1.13). Despite being numerically superior, none of these toxicities reach statistical significance for overall survival (OS): Hypothyroidism - 34.8 vs 18.7 months, p 0.16 ; HAS 25 vs 18.7 months, p 0.16 ; HFS 36.2 vs 19.9 months, p 0.053. When adjusted for the IMDC score on a multivariate model for PFS, the development of these toxicities lost its significance. **Conclusion:** The development of any grade HAS, Hypothyroidism and HFS was associated with an apparently better PFS and OS, but traditional prognostic factors like the IMDC score seems to be more important when predicting survival.

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INSTITUTIONAL PROTOCOL OF LOW DOSE ABIRATERONE IN METASTATIC CRPC PATIENTS USE IN A PUBLIC BRAZILIAN CENTER INSTITUTION

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BACKGROUND Abiraterone acetate (AA) is a potent selective and irreversible inhibitor of CYP17 used as standard treatment for metastatic Castration Resistant Prostate Cancer (mCRPC). In the pivotal trial COU-AA 301, AA 1000 mg/day plus prednisone increased overall survival after docetaxel in patients with mCRPC. A recent trial demonstrated not inferiority in the reduced dose of 250mg/day AA associated with dietary intake, which is described as AA low dose (AALD). OBJECTIVE As an institutional protocol, the main point is to describe a rational use of AALD in a public hospital, in patients with mCRPC exposed to Docetaxel in the first line. METHODS Metastatic CRPC patients with ECOG 0 or 1 who had biochemical progression after docetaxel exposure were submitted to an institutional protocol with AALD plus prednisone. The data was analyzed 4 weeks after the initiation of AALD, being determined the serum level of PSA prior to use of the drug and 04 weeks after. The protocol began in December 2018, being a cut off data population in May 2019. RESULTS The study population consisted of 20 patients included in the institutional protocol. The median serum PSA level after 4 weeks has changed from 77.0mg / dL to 62.25mg / dL, observing a drop of 19.1%. More than 50% PSA reduction was seen in 61.9% of the studied population, 13 of 20 patients. CONCLUSION Despite the premature data, this study shows PSA reduction with the use of AALD in mCRPC patients. Serum PSA is known as a surrogate end-point for overall survival in those patients. The protocol will for more mature data. In a near future AALD might be an alternative for treating patients in public institutions.

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