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MESSAGE FROM THE ORGANIZING COMMITTEE

Welcome to the Brazilian Breast Cancer Symposium 2018.

Dreams are meant to come true. Goiania Breast Cancer Symposium (GBCS) has been constantly growing during its seven editions. Thus, it was necessary to broaden new horizons, think big and envision the growth of the entire breast cancer scientific community. Therefore, in order to be regarded as an actual international event, and with the concept that all Brazilian regions could be represented, the GBCS name has been changed to BBCS — Brazilian Breast Cancer Symposium. We believe that this change will bring the awareness to researchers, participants and sponsors that this is a continental event, with a real possibility to grow even further.

On the other hand, such growth could not lead to the loss of the intimate nature that belongs to the culture of those who live in the Middle-West of Brazil and the expectations regarding the formation of new research groups, associations and businesses. Hence, the charming and picturesque city of Pirenópolis is a suitable place to host the event. Pousada dos Pirineus is a cozy place keeping the charm and the intimate atmosphere we longed for, but above all it can inspire the participants to jointly search new ideas, and especially new solutions related to the diagnosis, treatment and rehabilitation of breast cancer.

Another important change was the publication of abstracts in a specialized journal. The synergy between the Brazilian Society of Mastology and the Organizing Committee of the BBCS enabled this extra edition of mastology. Thus, each abstract can be reached easily, allowing citation and making it perennial.

Welcome everyone and make the most of every moment, every idea, every friendship and all the learning you can acquire during this time in Pirenópolis.

Ruffo Freitas-Junior
Rosemar Macedo Sousa Rahal
Régis Resende Paulinelli

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MAMMOGRAPHY FOR BREAST CANCER SCREENING IN BRAZIL: A CURRENT PROFILE

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Objectives: To quantify the number of bilateral screening mammographys performed for the first time in women over 40 years of age in Brazil, based on the variables educational status, previous clinical examination and age group. Methods: Ecological study, population-based and cross-sectional design. Considered the total number of bilateral screening mammographys performed in women over 40 years of age for the first time between 2009 and 2015. The data were collected from the Breast Cancer Information System (SISMAMA/SUS). Initially, descriptive statistics were performed and then the data were analyzed by ratio scale and relative frequency. **Results:** A total of 1,157,533 screening mammographys were performed during the quoted period, and in the years 2013 and 2014, there was a consecutive decrease of 37.7% and 51.6%, respectively, in the total number of examinations. Regarding the educational status of the women who took the exam for the first time, 54.6% had incomplete elementary education, and 9.44% were illiterate. Of these, 43.6% and 53.7%, respectively, had not had previous clinical examination of the breasts. Moreover, the analysis by age group shows that 26.5% of those who did not complete elementary school were between 40 and 44 years of age, and 16% of those with no schooling were 50 to 54 years old. **Conclusion:** This study verified that the decrease in the number of bilateral screening mammographys in the years 2013 and 2014 may be linked to the approval of Administrative Rule number 1.253/2013, which restricts the examination to women between 50 and 69 years of age. The low level of educational status, in turn, influenced in less demand of both the clinical examination and the screening test for cancer. The age group, however, differed from the Ministry of Health standard, which shows that women newly inserted into the risk group for screening tend to carry out preventive measures more frequently. Therefore, less restricted access to mammography is necessary, as well as health promotion measures that encourage lower- educated middle-aged women to take preventive measures with their health. In this way, it will be possible to identify breast lesions in the initial stages, to treat them and, consequently, to reduce the sequels generated by breast cancer.

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HIGH RISK FOR CARDIOVASCULAR DISEASE IN POSTMENOPAUSAL BREAST CANCER SURVIVORS

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Objective: To evaluate cardiovascular risk factors in postmenopausal women treated for breast cancer compared to postmenopausal women without breast cancer. **Methods:** A cross-sectional clinical study was performed with 96 postmenopausal women treated for breast cancer compared to 192 postmenopausal women without breast cancer (control) aged 45 to 75 years. Women with amenorrhea >12 months, age ≥45 years, and histological diagnosis of breast cancer without distant metastatic disease nor established cardiovascular disease (CVD) were included in the main group. The control group comprised women with amenorrhea >12 months, age ≥45 years, without breast cancer nor CVD. The groups were matched by age, time since menopause and body mass index (BMI) in the proportion of 1 case for 2 controls. Clinical and anthropometric data (BMI and waist circumference) were collected. Total cholesterol, HLD, LDL, triglycerides, glucose and insulin levels were measured. Women who presented three or more of the following criteria were diagnosed as having metabolic syndrome (SM): waist circumference (WC)>88 cm; TG≥150 mg/dL; HDL cholesterol <50 mg/dL; blood pressure ≥130/85 mmHg; glucose ≥ 100 mg/dL. For measuring plasma concentrations of HSP 60 and 70, immunoassays by ELISA technique were used. Carotid artery ultrasonography was performed to evaluate the intima-media thickness. For statistical analysis, Student's t-test, Gamma Distribution, Chi-Square Test, and Logistic Regression (odds ratio-OR) were used. **Results:** Patients with breast cancer had higher levels of HSP 60 and lower HSP 70 when compared to control ($p<0.05$). There was a greater prevalence of atheromatous plaque among women treated for breast cancer when compared to the control group (19.8% vs. 9.4% respectively) ($p<0.05$). In the risk analysis adjusted for age, time since menopause and BMI, women treated for breast cancer had a significantly increased risk for MS (OR=4.21, 95%CI 2.28–7.76), presence of atheromatous plaque (OR=2.61, 95%CI 1.19–5.72), hypertriglyceridemia (OR=2.32, 95%CI 1.33–4.0) and large waist circumference (OR=11.22, 95%CI 4.0–31.65) when compared to women without breast cancer ($p<0.05$). **Conclusion:** Women treated for breast cancer had a higher risk for metabolic syndrome, diabetes, atherosclerotic disease, hypertriglyceridemia and abdominal obesity, important risk factors for cardiovascular disease when compared to postmenopausal women without breast cancer.

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EPIDEMIOLOGICAL PROFILE OF BREAST CANCER IN MEN IN BRAZIL BETWEEN 2008 AND 2018

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Objectives: To outline the epidemiological profile of breast cancer in men based on variables as mortality rate, age, race, hospitalization and total cost. **Methods:** Ecological study, population-based and cross-sectional design. The total number of cases and deaths occurred in Brazil for male breast cancer between january 2008 and 2018. The data were collected from the Hospital Information System of SUS (SIH/SUS). Initially, descriptive statistics were performed and then the data were analyzed by ratio scale and relative frequency. **Results:** The total number of cases of malignancy reported in Brazil, between the mentioned period, was 4,090. The mortality rate presented progressive increase, with an average percentage of 7.5%. In relation to age, the group of 35 to 70 years old had the highest number of patients, especially the young people aged 60 to 70 years, who represented 23% of the total. The third age also presented more than 25% of the deaths due to neoplasia. Whites and browns were the most affected, accounting for 53% and 40% of the total, respectively. Most of the patients were treated in private institutions, which, in turn, had a 3.5 times higher expenditure when compared to the public system. **Conclusions:** This study verified an increase in the number of breast cancer cases in men in Brazil, as well as a rise in the death rate due to this disease. The finding by age group shows a peak in young adults, which coincides with the world literature, which shows a predominance between 60 and 70 years. In contrast, ethnicity analysis in this study shows that whites and browns account for the majority of those afflicted, while the world standard shows blacks as the most affected. The higher expenditures by private health agencies may be hypothetically justified by the fact that they have better conditions of medical and hospital care for these patients. Nonetheless, it should be taken into account that SUS often directs patients to private institutions because they do not have adequate and adequate infrastructure. Given the above, it is evident the need for studies aimed at a better understanding of this disease, since late diagnosis, as reported, leads to higher death rates, as well as increasing expenditures of government and private institutions with the treatment of patients.

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PERI-LYMPH NODAL PATHOLOGICAL FIBROSIS AND AXILLARY SURGICAL IMPAIRMENT AFTER 14G PERCUTANEOUS FRAGMENT BIOPSY OF SENTINEL LYMPH NODE DETECTED WITH CONTRAST-ENHANCED ULTRASONOGRAPHY (CEUS) IN EARLY BREAST CANCER PATIENTS

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Objectives: To evaluate peri-lymph nodal pathological fibrosis in axillar surgical specimens of breast cancer patients submitted to 14G percutaneous fragment biopsy (PFB) of axillary sentinel lymph node identified with contrast-enhanced ultrasonography (CEUS). **Methods:** This study was originally designed to assess the performance of CEUS+PFB on the axillary staging of early-stage breast cancer. The selection of participants was interrupted, and the design was reformulated to this descriptive cross-sectional study after unexpected peri-lymph nodal pathological fibrosis reported in axillary surgery specimens. The frequency or means of the main clinical, ultrasonographic, surgical and pathological characteristics were calculated. T-test or Pearson Chi-Square test compared the groups of patients with and without peri-lymph nodal pathological fibrosis. **Results:** Forty-eight patients submitted to CEUS+PFB and axillary surgery were eligible for this study. Axillary surgical specimens showed peri-lymph nodal fibrosis in 9/48 (18.7%) patients. The majority of peri-lymph nodal fibrosis were described as moderate (4/9(44.4%)) or severe (4/9 (44.4%)). There was no significant difference between groups regarding patient age (p=0.99), breast tumor size (p=0.60), rate of lymph-node metastasis (p=0.83), use of aromatase inhibitor (p=0.43), number of intradermal contrast injection (p=0.68), CEUS sentinel lymph identification (p=0.10), and CEUS sentinel lymph node mean maximum diameter (p=0.24). Axillary surgical impairment or hematoma were only reported in patients with axillary peri-lymph nodal fibrosis (p<0.001 and p=0.003, respectively). Mean time between CEUS+PFB and axillary surgery was shorter (p=0.04) in patients with peri-lymph nodal fibrosis. **Conclusion** Peri-lymph nodal pathological fibrosis may impair the axillary surgical procedure of early breast cancer patients staged with CEUS+PFB.

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CLINICAL QUALITY CONTROL OF MAMMOGRAMS EVALUATED IN A BRAZILIAN TERTIARY HOSPITAL

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Objective: To evaluate the clinical quality of mammograms performed in users of the Unified Health System (SUS), referred to a tertiary hospital. **Methods:** A prospective study whose unit of observation was the mammograms of women referred for consultation in a Breast Cancer Resource Center, located in the city of Goiânia, Brazil, from May to October 2017. Mammograms for screening or for diagnosis were included, performed within six months prior to study inclusion. The clinical quality of the mammograms was evaluated using 40 variables per exam, related to the identification, the technique of the exam, the executing equipment, the radiological findings, the exam report and the mammary positioning. For these last variables, a comparison was made according to the origin of the exam (public vs. private network). **Results:** A total of 4560 items of clinical image quality were evaluated in 114 women whose mean age was 50.6 years. Of the total items analysed, there were 660 failures (14.47%), and 443 (67.12%) failures were related to breast positioning. Among the positioning failures, the absence of visualization of the pectoralis major muscle (86.8%) and the inframammary sulcus (79.8%) in the CC and MLO incidences, respectively, were the most frequent. Considering the positioning criteria evaluated in the MLO incidence, the examinations performed in the private network presented a higher risk of failures related to the nipple centered (RR 4.66, 95%CI 1.05–20.62, p=0.02) and the visualization of the retro-mammary fat (RR 4.14; 95%CI 0.92–18.66, p=0.04), in relation to the exams performed in the public network. **Conclusion:** The mammograms analysed presented an inadequate quality pattern, with predominance of non-compliance related to breast positioning.

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LATE RESULTS OF REGIONAL BREAST CANCER SCREENING PROGRAM PERFORMED IN THE INTERIOR OF SÃO PAULO STATE, BRAZIL

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Objectives: Evaluation of the Barretos Regional Health Department (DRS V), São Paulo State results, after 15 years of its implantation. Methodology: The local Research Ethics Committee approved a retrospective study, of patients with breast cancer diagnosed at DRS-V/SP during a regional breast cancer-screening program. We evaluated the impact of mammographic screening in relation of clinical stages in three different periods: (1) Phase 1- 1999 to 2001, prior the beginning of the project; (2) Phase 2- 2003 to 2004, during the project implantation; (3) Phase 3- 2011 to 2016, in phase of consolidation. In Phase 3, the rate of conservative mammary surgery, conservative axillary and maintenance of the mammary cosmese, was evaluated by biennium. Mammary cosmesis was considered the sum of the rate of conservative surgery and mastectomy with immediate reconstruction with prosthesis. The difference between the groups was analyzed by the chi-square test. **Results:** In the period prior to the introduction of the screening program, the rate of patients with early stage (0 + I) was 13%. In, the first biennium (2003–2004) of implementation phase, at estimated population of 55,238 women, 17,964 women were screened (32.5% coverage) and 76 breast cancer patients were diagnosed. 45.4% of the women had never taken the exam in their lives. The rate of diagnosis of early tumors (EC 0 + I) was 43.3%. In Phase 3, 55.6% of the patients were asymptomatic; and when the presence of breast symptoms was evaluated, it was observed that the early stage rate was 83.4% and 31.9%, respectively, in the absence and presence of symptoms ($p < 0.001$). In the last biennium of Phase 3 (2015–2016) with an estimated 66,818 women, 593 cases were diagnosed (coverage of 47%). In the different phases, the rate of early detection (EC 0 + I) rose from 13.0% to 43.3% to 60.0%, phase 1, 2 and 3, respectively ($p < 0.001$). The number of cases diagnosed per biennium in phase 3 was 165, 217 and 211, respectively. In this same phase the overall rate of conservative surgery was 68.1% in the breast, 74.5% in the armpit and 89.0% in the cosmese. Evaluating the first, second and third biennia of Phase 3, respectively: (1) Conservative surgery of 62.2%, 70.5% and 70.4%; (2) Immediate reconstruction of 71.2%, 54.8% and 66.0%; (3) Sentinel lymph node of 70.9, 76.8% and 75.2%; (4) Cosmese of 89.1%, 88.1% and 89.9%. **Conclusion:** The implementation of organized screening determines an increase in the number of early stage case and it is associated with an increase in the rate of conservative treatment and breast cosmesis.

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ONCOPLASTIC SURGERY IN THE CONSERVATIVE TREATMENT OF THE LOCALLY ADVANCED BREAST CANCER: A SISTEMATIC REVIEW

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Introduction: Breast cancer conservative surgical treatment has become the standard procedure to reduce mutilation and preserve the body's self-image. Advances in adjuvancy have widened indications for larger tumors and new trials are demonstrating safety in locally advanced cases. The goal of this systematic review is to evaluate the role of oncoplastic surgery in the treatment of locally advanced breast cancer. **Methods:** 523 papers were analised from pubmed electronic data base from 2012 to 2017 and 12 papers were selected to analysis with respect to design and outcomes. **Results:** No randomized trial was found. Most of them were retrospective. The average tumor size varied from 40 to 62mm. The rate of conversion of mastectomy to conservative treatment oscilated 34–72,3%. Wise pattern was the most used technique. A greater amount of excised tissue was found when oncoplastic surgery was performed. No diference was observed concerning positive margins comparing the oncoplastic technique versus standard conservative treatment. Oncoplastic tecniques showed higher rates of surgical complications but that did not delay adjuvancy. Local regional recurrence and overall survivel varied from 9 – 14,6% and 76,7–86,6%, respectively. Cosmetic results were considered acceptable by the patients in 84-92,3% of the cases. **Conclusions:** Oncoplastic tecniques allows greater rates of breast conservation in locally advanced cancer cases without apparently putting at risk oncologic safety.

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ANALYSIS OF BOOST VOLUME DEFINITION IN RADIATION THERAPY FOR CONSERVATIVE BREAST SURGERY

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Purpose/Objective(s): The surgical bed clipping in breast conserving surgery is not a worldwide systematic practice, leading to a major difficulty in the definition of the boost volume. In practice, when the surgical bed is not marked, to compensate for uncertainties, the boost dose is given to the whole quadrant (tumor pre-surgical clinical location). The purpose of this study was to evaluate the role of surgical clips placement in the definition of boost treatment volume. **Materials/Methods:** Clinical Target Volumes (CTV) were defined as: CTV Breast, CTV Quadrant (based on physical exam and pre-surgical images), CTV Boost, defined by clip plus margin (1 cm for 2 or more clips and 2 cm for 1 clip only) plus radiological changes, CTV NT (normal tissue), defined by CTV Quadrant minus CTV Boost and CTV MISS (CTV that would be outside the treatment volume), defined by CTV Boost minus CTV Quadrant. **Results:** A total of 247 patients were included. Upper lateral quadrant was the most common clinical location (47.3%). The median number of clips used was three. The mean volumes were: CTV Breast: 982.52cc, CTV Boost: 36.59cc, CTV Quadrant: 285.07cc, CTV NT: 210.1cc and CTV MISS: 13.57cc. Only 50.6% (125) of the patients presented the CTV Boost completely inside the CTV Quadrant and in 47.3% (117), partially inside. Among patients with any CTV MISS, 80.3% (98) had 10% or more of CTV Boost outside the treatment volume. Regarding CTV MISS, there were no statistically significant differences between the groups with 1 clip versus 2 or more clips, nor between patients with or without reconstructive surgery. In average, the CTV Boost was 87% smaller than the CTV Quadrant. The whole quadrant irradiation would lead to unnecessary irradiation of 26% of normal breast tissue. **Conclusion:** Surgical bed clipping is up most important in the definition of the boost volume irradiation to ensure precision minimizing geographical miss and optimizing surrounding normal tissue sparing.

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EXPRESSION OF β-CATENIN AND E-CADHERIN IN BREAST DUCTAL CARCINOMA IN SITU AND THEIR ASSOCIATION WITH SURVIVAL: FOLLOW UP OF 9.0 YEARS

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Introduction: Tumor invasion and metastatic status still lead the poor prognostic in breast cancer. β-catenin and e-cadherin are components of cadherin-based cell-to-cell adhesion and also an important intermediate in several signal transduction pathways, including the Wnt pathway. Both are related to invasion, progression, and recurrence of cancer, but there are only few studies regarding in ductal carcinoma in situ (DCIS). The aim of study is to evaluate β-catenin and e-cadherin expression in pure DCIS and correlate these expressions with immunohistochemistry pattern, disease free survival and local recurrence. **Methods:** A retrospective cohort study was performed using the records from 1999 to 2009 in our Institution. The medical files of all patients with pure DCIS were reviewed and clinical, treatment and local of recurrence data were obtained. A tissue microarray paraffin block (TMA) was constructed from all biopsies. The TMA was submitted to immunohistochemical staining for β-catenin, e-cadherin, claudin-4, estrogen receptor, progesterone receptor, HER-2 and Ki-67. β-catenin and e-cadherin were categorized on low or high expression depending on score intensity and quantity. **Results:** It was included 137 patients with pure DCIS and 68 could have TMA analyzed for β-catenin and e-cadherin. The mean diagnostic age was 52.31±11.12 years. Total local recurrence rate was 11.76% (50.0% were invasive carcinoma) after median follow up of 9.06 years. High expression of β-catenin and e-cadherin were 71.93%, and 87.5%, respectively. High expression of β-catenin was related to high expression of claudin-4 (p=0.017), e-cadherin (p=0.041), positive estrogen receptor (p=000.8), and positive progesterone receptor (p=0.048), but not to HER-2 and Ki-67. High expression of e-cadherin was associated with high expression of claudin-4 (p=0.005) and β-catenin (p=0.017), but not others variables. There was no difference in local disease free survival between high and low expression of β-catenin (p=0.955) and e-cadherin (p=0.890). **Conclusion:** High expression of β-catenin and e-cadherin was more frequent than low expression in DCIS. Although, β-catenin was related to others adhesion components (as claudin and E-cadherin), and hormonal receptors (that are known prognostic factors), there was no association of local recurrence or disease free survival. E-cadherin expression was also not correlated with disease free survival.

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PHASE II CLINICAL TRIAL, TESTING THE EFFICACY OF A HUMANIZED MONOCLONAL ANTIBODY AGAINST THE LEWIS-Y ANTIGEN (LE Y)

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Background: The Lewis-Y (Le y) antigen is a blood group-related antigen expressed in over 70% of epithelial cancers. It is expressed in 44% of breast cancers. **Objectives:** The primary endpoint was to evaluate the clinical efficacy of hu3S193, a humanized monoclonal antibody against the Lewis-Y antigen, in advanced hormone positive breast cancer after failure of at least one line of endocrine therapy. **Methods:** This multicenter, single arm, phase II trial enrolled eligible patients to receive hu3S193 weekly at a dose of 20 mg/m2, intravenously. Efficacy was measured as clinical benefit rate (objective response or stable disease for at least 24 weeks). **Results:** Of 49 patients screened, 27 (55%) were Le y positive. Of these 27, only 20 were eligible for efficacy analysis. No complete or partial responses were observed. Four patients had stable disease for 24+ weeks (clinical benefit rate 20%). One patient remains on study drug maintaining stable disease for over 2 years. This patient had high expression of Le y. The most common treatment-related adverse events were headache (50%), cough (45,5%) and nausea/vomiting (31,8%). Hu3S193 lacked sufficient activity in is trial and the investigators stopped accrual at the first interim analysis. High expression of Le y might play a role in selecting patients to this strategy.

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TRANSCRIPTION EXPRESSION OF IL-6 AND IL-1β GENES AND ITS RELATION WITH THE EFFICACY OF CHEMOTHERAPY IN WOMEN WITH BREAST CANCER

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Objective: Investigate differences in transcriptional levels of inflammatory markers in women with breast cancer (BC) submitted to chemotherapy (CT) or not, in order to identify possible biomarkers related to treatment efficacy. **Methodology:** This study was carried out in a university hospital with women who presented a positive biopsy result for BC. Women with BC were divided in two groups: patients not submitted to any antineoplastic treatment referred for elective breast surgery (n=21) and patients submitted to CT (n=24). Peripheral blood was collected at the surgical center prior to surgery, or during CT, before infusion of chemotherapy agents, and stored at -4oC until transcriptional processing and analysis. After extracting total RNA from blood samples and obtaining cDNA, the relative transcriptional quantifications of the target genes interleukin-1β (IL-1β), interleukin-6 (IL-6), interleukin-10 (IL-10) and tumor necrosis factor (TNFα) in relation to the endogenous gene β-2- microglobulin (B2M), were analyzed by real-time PCR (qPCR). Clinical and therapeutic data, such as histological tumor type and tumor receptors immunohistochemistry, were obtained from the analysis of the reports of anatomopathological exams. The model of generalized estimation equations (GEE) was used to verify the variation of IL-1β transcriptional levels regarding to tumor molecular phenotypes. **Results:** A significantly higher transcriptional expression of IL-6 in the BC group without CT was identified (p=0.05), suggesting the possible removal of tumor cells in the BC group with CT, since these cells have the ability to produce and release IL-6, by reducing the number of these cells, because CT reduces the levels of circulating IL-6. Significantly higher expression of IL-1β in BC group with CT (p=0.003) was also evidenced, indicating a possible association of this marker with the cytotoxicity promoted by chemotherapeutic agents. In addition, by analyzing the association graph of mean IL-1β transcriptional levels with the corresponding tumor molecular subtype, a change in IL-1β expression was identified according to the molecular phenotype variation and for BC group without CT was observed higher transcriptional means with the most aggressive molecular phenotype. **Conclusion:** We suggest a possible association between IL-6 and IL-1β expression level with CT efficacy, indicating the potential of these interleukins as therapeutic biomarkers.

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ASSOCIATION OF ONCOGENE RAC 1 WITH HER-2 TUMORS AND WITH AGGRESSIVITY OF TRIPLE NEGATIVE TUMORS

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Objective: To evaluate the expression of RAC 1 in patients with breast cancer and its molecular subtypes. **Method:** Samples were collected from 41 patients who underwent mastectomy at the Barao Lucena Hospital, 10 luminal A, 15 luminal B, 1 luminal (undifferentiated), 6 HER-2, 9 Triple- negative. RNA was purified by RNAeasy KIT (Qiagen) and quantified by Nano Drop 2000 (Thermo). The cDNA was synthesized with the QuantINova ReverseTranscripition kit (Qiagen) and real-time PCR was performed in StepOnePlus (Applied Biosystems) with the Go Taq Qpcr Master Mix kit (Promega). The expression of b-actin was used as endogenous control and the ACT was calculated to analyze the reactive quantification of RAC 1 in each sample. Statistical analyzes were performed with R. **Results:** The relative expression of RAC 1 presented a metric behavior. The HER2 subtype had the highest RAC 1 expression compared to luminal (p=0.0006899), even when stratified in Luminal A (p=0.003592) and in Luminal B (p=0.00762) and with larger tumor size (p=0.01441). No association was observed between RAC 1 expression and KI-67 LOW (KI-67 lower 20%), with p values ranging from 0.2186 to 0.9472. **Conclusion:** The absence of the estrogen receptor seems to amplify the expression of RAC 1 in response to the metabolic pathway DE her 2. Patients who underwent hysterectomy showed a reduction in the expression of RAC 1. RAC 1 presents a great potential for new progression studies tumor in triple-negative tumors.

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TWIST1 KNOCKDOWN ELUCIDATES THE REGULATION OF TH17-LIKE RESPONSE IN HER2 BREAST CANCER SUBTYPE

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Introduction and objectives: Breast cancer (BC) is a heterogeneous disease, composed by multiple subtypes with different molecular characteristics and clinical outcomes. In Brazil, this neoplasia is the first cause of cancer death in women, mainly due to late diagnosis, when the possibility of developing metastasis is improved. The metastatic process depends on the expression of transcription factors (TFs) related to epithelial-mesenchymal transition (EMT). Among these factors, Twist1 is described to be the master regulator of EMT in BC, although its role in BC subtypes remains unclear. The aim of our study is to investigate the role of Twist1 in intrinsic molecular subtypes of breast cancer. Material and methods: We evaluated the mRNA levels for NF-κB, Twist, Slug, and Sip1 on 46 breast tumor samples. We also performed Kaplan-Meier curves to associate gene expression to survival. Then, we silenced Twist1 expression in HCC-1954 (HER2) cells using shRNA-approach, confirmed the knockdown by RT-qPCR and immunoblotting, and subsequently performed a microarray analysis by GeneChip human exon array, whose findings were analyzed on Metacore software. We confirmed some altered genes expression using RT-qPCR. Finally, we examined IL-17 signaling members and its downstream targets by flow cytometry, immunoblotting and ELISA. Results and conclusion: In BC samples, we observed that Triple-negative group expressed more Slug and Sip1 and, interestingly, Twist1 was overexpressed in HER2 group. Kaplan Meier showed higher probability of death for those patients who expressed high levels of NF-κB and Twist. The TWIST1 knockdown in HER2 cells provoked profound molecular alterations, since 141 genes were up-regulated and 190 down-regulated. In silico analysis revealed numerous correlations between Twist1 with important biological processes and signaling pathways, such as EMT via TGF-β/SMADs, extracellular matrix remodeling, Th17 signaling, among others. Interleukin (IL) -17 signaling was examined through the expression of IL-17RA and Act1 proteins, which act to trigger this signaling together with IL-6 and IL-8 levels, which are targets of this signaling. Both results reported, consistently, that Twist1 plays an important role in activating a Th17 profile in HER2 BC context. Finally, our findings may contribute for a better understanding of Twist1 role in Her2 breast cancer subtype and point out Twist1 as potential target for the development of new therapies.

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ANALYSIS OF PEAK TORQUE OF WOMEN TREATMENT CHEMOTHERAPY WITH APPARENTLY HEALTHY WOMEN

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Objective: To evaluate and compare the muscular performance of women with breast cancer during chemotherapy with healthy women. **Methods**: Participated the study 37 women divided into a control group (age: 52,2±13,11) composed of healthy women and group treatment (age: 55,8±8,37) composed of women who were between the third and fourth cycle of chemotherapy. The muscular performance was evaluated through the isokinetic dynamometer biodex system III, to which the peak torque was analyzed by performing 2 sets of 4 repetitions of knee extension at $60^{o}.s^{-1}$ in the concentric action, with 2-minute interval between the set. The normality of the data was evaluated by the Shapiro-Wilk test. Data were analyzed by Student's t test. The significance level was defined a priori at $p<0.05$. The size of the effect d of Cohen was calculated from the difference between the groups to examine the magnitude of the effect of breast cancer treatment on the variables investigated. The present study was approved by the Research Ethics Committee of the Federal University of Goiás (CAAE: 50717115.4.0000.5083), and by the Research Ethics Committee of the Hospital of Clinics (HC / UFG) (CAAE: 50717115.4.3001.5078). Resolution 466/12 of the National Health Council. **Results:** There was no significant difference in peak torque between groups ($p=0.95$, $d=0.02$). **Conclusion:** Women in breast cancer treatment during the third and fourth cycles of chemotherapy did not present differences in measures of muscular performance when compared to healthy women.

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ANALYSIS OF A SYNONYMOUS SINGLE NUCLEOTIDE VARIANT IN PLATELET-DERIVED GROWTH FACTOR RECEPTOR ALPHA GENE IN TRIPLE NEGATIVE BREAST CANCER

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Objective: This research had the purpose of ascertain if mutations in PDGFRA gene (platelet-derived growth factor receptor alpha) are associated with triple negative breast cancer, and compare this group with luminal subtype. Clinical, and staging data were considered. **Methods:** Genomic DNA was extracted of 12 tissue samples in which 9 from luminal subtype and 3 TNBC by *DNeasy® Blood & Tissue Kit* (Qiagen). PDGFRA gene were amplified by PCR (polymerase chain reaction) with specific primers and *GoTaq® Green* Master Mix (Promega), in the thermal cycler *Veriti* (Applied Biosystems). The PCR products were purified by *ExoSAP- IT PCR Product Cleanup* (Thermo Fisher Scientific). PCR fragments were then sequenced using *BigDye Terminator* (Applied Biosystems) on a *MegaBACE 1000 Sequencing System* (GE Healthcare). **Results:** The results were used to performance sequence alignment in *CLC Genomics Workbench* according to PDGFRA gene sequence (NG_009250).The age of women were from 32 to 70 years. All TNBCs patients in this study were recidivant in breast cancer. Upon analysis of the PDGFRA genome, a mutation was found in all TNBC samples, and in none of the luminal subtype. The mutation consists of an A> G exchange at position 50792 of the DNA strand. The amino acid encoded by this region, proline, remains preserved. Thus it is considered a sSNV (Synonymous Single Nucleotide Variant), classified how a type of silent mutation. Despite being classified as silente, is now known that sSNVs may have multiple consequences for RNA maturation and stability as as well as protein translation. In addition, tissue-specific and tumor-specific changes in tRNA (transfer ribonucleic acid) expression combined with symmetric tRNA abundance may play a role. Like many receptor tyrosine kinases (RTKs), PDGFRA is involved in the progression of a variety of cancers either by overexpression or by increased activity. **Conclusion:** Systematic reporting of sSNVs will be essential to achieve positive progress in our understanding of the full spectrum of functional effects associated with genomic variants in the population as well as in each patient. Knowing this genetic information is essential for precision medicine. In the future it will provide diagnosis and treatment specific to each individual.

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INVESTMENT OF THE UNIFIED HEALTH SYSTEM IN SCREENING MAMMOGRAPHY IN BRAZIL, 2008–2017

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Objective: To evaluate the investment of financial resources applied by the Unified Health System (SUS), in the mammographic screening performed by in Brazil, from 2008 to 2017. **Methods:** A prospective study where the number of mammograms performed by the SUS was observed in women aged 50–69 years and the value approved for payment of the respective examinations, available in the Outpatient Information System (SIA/DATASUS). The amount approved for payment was compared with the amount established for the SUS (R$ 45.00) and the number of exams performed. **Results:** In the period evaluated, R$ 968,567,514.42 were invested in mammographic screening by the Union, for a total of 22,214,981 examinations performed, at a unit value of R$ 43.60. When comparing this value with that established by the SUS (R$45.00), it is possible to infer a surplus for the System of R$31,106,630.58, which would represent the accomplishment of approximately 691 thousand new exams. On the other hand, the amount paid per examination remained fixed in the 10 years evaluated in the study. In a simple analysis of monetary restatement in relation to inflation in the period evaluated, when applying the Extended Consumer Price Index (IPCA), the expected value for payment of the exam in 2017 would be approximately R$ 79.41. **Conclusion:** The scenario evaluated suggests that there were resources for the mammographic screening, but not enough to increase the coverage of the exams and maintain the established value for the SUS, of R$ 45.00.

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RETURN TO WORK ITS IMPACT ON THE QUALITY OF LIFE OF BRAZILIAN BREAST CANCER PATIENTS

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Objective: To evaluate the impact of return to work on the quality of life of breast cancer patients, and factors related to non- return to work. **Method:** A prospective, cross-sectional study approved by the Research Ethics Committee (1180/2016). The study was performed in patients who worked in the during 2012–2014; clinical stage 0 to III, age 25–60 years old. Based on a previous National study, a sample of 304 women was estimated. Standardized clinical records evaluated all patients, and the questionnaire EORTC QLQ-C30, EORTC BR-23, SPADI and HADS were also applied. Patients were randomized to a 1:1 to perform physical therapy examination, which was based on shoulder goniometry, hand dynamometry, and limb volume. Data were analyzed by the chi-square test and the Mann-Whitney test. Univariate and multivariate analysis were performed. **Results:** 304 were included, where 163 were submitted to physiotherapy evaluation. The mean age and schooling was 46.1 years and 11 years, respectively. 49.3% underwent conservative surgery; 51.5% axillary lymphadenectomy; 86.1% received chemotherapy, 84.2% had adjuvant hormone therapy, and 87.7% had radiotherapy, but 46.2% had radiotherapy on the supraclavicular fossa. At the moment of the diagnosis 50.7% exerted manual activities, 28.0% intellectual activities; and 21.4% manual and intellectual activities. 94.7% stopped working during treatment. 84.9% received social security benefits. 54.0% returned to work after treatment. The women who returned to work presented lower age ($p<0.001$), higher schooling ($p<0.0001$), higher income ($p<0.001$), and smaller initial tumor size ($p=0.008$). These patients were generally submitted to sentinel lymph node ($p=0.02$), received adjuvant chemotherapy ($p=0.004$), and had intellectual demand work ($p<0.001$). There was an overall significant decrease in work capacity. Patients whose had loss of strength in the hand had a 2.2-fold risk of non-return to work ($p=0.02$). In the multivariate model to evaluate the not return to work, pre-treatment variables were age, schooling and clinical staging. Before treatment, lymphadenectomy increased 1.9 times the risk of not returning to work, and self-reported loss of strength in the hand 2.9 times. Physical demand work has raised the risk by 2.7 times. The women who returned to work presented a better quality of life through the EORTC QLQ C30 questionnaire; by BR23 presented higher scores related to body image and sexual function; by SPADI lower scores in relation to disability and pain; and by HADS lower scores related to anxiety and depression. **Conclusion:** 54% of patients did not return to work after breast cancer treatment. It was influenced by age, schooling, previous type of activity, axillary treatment, and physical sequel related to loss of strength on the hand. Return to work improved patients' quality of life.

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AGE OF DIAGNOSIS AND BODY MASS INDEX IN BREAST CANCER PATIENTS: ANALYSIS OF A BRAZILIAN REFERENCE CENTRE

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Objetives: Breast cancer affects about 59,000 Brazilian women annually according to data from INCA 2018 (National Cancer Institute) and 14,388 deaths are related to the disease. There are few data about the age specific incidence in our Country and almost anything about the prevalence of obesity in our population. Pérola Byington Hospital is one of the most important cancer centers specialized breast cancer treatment in Brazil and we are responsible for treating about a thousand new cases of breast cancer annually. **Methodology:** We have created a web-based system that helped us to input information about the breast cancer cases treated in our hospital. This study was performed at the Pérola Byington Hospital evaluating the age of diagnosis and their body mass index (BMI) before the treatment. Descriptive data is shown. **Results:** There were 8,420 cases of breast cancer enrolled in our analysis and most of our cases were diagnosed with 50 or more years old (n=5.507) which corresponds to 65.41%. The patients' age ranged from 18 to 93 years, with a median of 54 years. Only 1.23% of the cases were diagnosed below 29 years of age and 33.2% of the cases were between 30 and 49 years. There was a considerably number of cases that have been diagnosed between 40 and 49 years old (n= 2.044) which correspond to 24.28% of our population. We made an analysis to see if from 2011 to 2017 there was any difference in incidence specified by age and it was not statistic significant. Regarding the BMI we were able to recover 5,878 cases of breast cancer and the majority of our patients were obese or overweigh by the time of diagnosis (65.8%). **Conclusions:** In our analysis we have found that there are a lot of breast cancer in young patients and we have to take that in account to treat better our patients, there is no increase during the last years of young patients in our data. Most of our patients are obese or overweight at the time of diagnosis of breast cancer.

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MICRORNAS AS BIOMARKERS FOR BREAST CANCER PROGNOSIS: A SYSTEMATIC REVIEW

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Objectives: Breast cancer is an important health problem worldwide and the identification of prognostic markers in breast cancer is important in order to establish the most successful treatment for each patient. MiRNAs are non-coding RNAs, which modulate the expression of more than 50% of human genes at the post-transcriptional level. Deregulation of miRs is described in many types of tumors leading to their acting as tumor suppressors or oncogenes. This systematic review of the literature aimed to highlight tumor miRNA quantification, by real time PCR, as prognostic biomarkers in breast cancer. **Methods:** We systematically searched the PubMed database, in order to identify eligible studies and 1457 articles were initially selected. After reading the abstracts, 74 articles were read in complete and 20 studies were included in the review. **Results:** Twenty studies investigating the association between tumoral miRNA expression levels (predictive factors) and the prognostic in breast cancer patients were included in the review. MiRNA-21 and miRNA-200b were the most commonly investigated miRNA in breast cancer prognosis. Lymph node metastasis was significantly associated with the overexpression of miRNA-21, miRNA-301 and miRNA-370, and also to the under expression of miRNA-124, miRNA-127, miRNA-129-5p, miRNA199-5p, miRNA-206, miRNA-218, and miRNA-339-5. Distant metastasis was associated to miRNA-204 under expression. Tumor size was associated with the overexpression of miRNA-21 and miRNA-301, and also to under expression of miRNA-29b and miRNA129-5p. In relation to prognosis, lower survival rates were associated with the overexpression of miRNA-21, miRNA-301 and microRNA- 711, and with under expression of miRNA-15a, miRNA-29b, miRNA-124, miRNA-129-5p, miRNA-199b-5p, miRNA-200b, miRNA-204, miRNA-206 and miRNA-218. Higher survival rates were associated with the overexpression of miRNA-339-5 and miRNA-127 On the other hand, higher survival rates were associated with overexpression of miRNA-339-5 and miRNA-127, and also to under expression of miRNA-210. **Conclusion**: According to the results, preclinical and clinical investigation performed on tissue-specific miRNAs can be considered as novel promising biomarkers for prediction of prognosis in breast cancer patients.

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EFFECTS OF [10]-GINGEROL IN COMBINATION WITH DOXORUBICIN ON TRIPLE NEGATIVE BREAST CANCER *IN VITRO* AND *IN VIVO*

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Objective: Triple negative breast cancer (TNBC) often metastasizes to bones, lungs and brain. It does not respond to current target therapies, and thus, limited treatments are available, especially for late stage disease. We have previously shown that [10]- gingerol has cytotoxic and anti-metastatic properties against TNBC *in vivo* and *in vitro*. To further mimic a clinically relevant scenario, which often involves the use of multiple drugs, we evaluated the effects of [10]-gingerol in combination with doxorubicin for TNBC treatment. **Methods**: TNBC cells (MDA-MB-231 and 4T1Br4) were treated with [10]-gingerol (10G), doxorubicin (DOX) or both (10G+DOX) and assayed for viability, colony formation and apoptosis. Next, TNBC cells were inoculated orthotopically into the mammary fat pad of female mice. When tumours became palpable, mice were treated with saline solution (Control), 10G (5-10mg/kg daily), DOX (3mg/kg twice a week) or a combination of both (10G xmg+DOX xmg). Body weight and primary tumour growth were monitored throughout the entire experiment (30 days). Upon euthanasia, blood was collected to analyse the presence of circulating tumour cells (CTCs), as well as toxicity markers. Lungs, bones and brain were harvested for metastatic burden assessment. **Results**: The association of 10G and DOX had additive inhibitory effects on viability and colony formation and increased apoptosis in TNBC cells. Regarding to the *in vivo* experiments, 10G, especially when combined with DOX, dramatically reduced primary tumour growth, as well as the incidence and/or the number of viable circulating tumour cells. As a result, metastasis was also impaired. Moreover, the combination (10G+DOX) not only had the aforementioned additive antitumour and antimetastatic effects, but also attenuated doxorubicin-induced toxicity. Remarkably, only 7/15 mice treated with DOX remained alive at end-point, and this number increased to 11-12/15 when mice received 10G alongside (5 or 10 mg/kg, ip, daily, respectively). We also noticed attenuation in weight loss and hepatotoxicity (AST and ALT levels in serum) when the combination regimen was used. Additional analysis to elucidate the molecular mechanisms involved in these effects are ongoing. **Conclusion**: Taken together, our data indicate that [10]-gingerol could be used as adjuvant/complementary therapy for TNBC, enhancing the anticancer activity and attenuating undesired side effects of conventional chemotherapeutic agents.

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ANALYSIS OF POLYMORPHISMS IN THE TP53 GENE IN PATIENTS WITH CLINICAL DIAGNOSIS FOR HEREDITARY BREAST CANCER

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Breast cancer is the second most frequent type of cancer in the world and the most common among women. Of the total number of cancer diagnosis each year, it is estimated that 5% to 10% are hereditary, usually caused by mutations in tumor suppressor genes. Mutations or polymorphisms in the TP53 gene are the most common genetic alterations in human malignant tumors. More than 85 polymorphisms in the TP53 gene have been identified, with PIN2 located in exon 2, PIN3 located in exon 3 (16pb doubling) and PEX4 located in exon 4 (Arg72Pro). Studies have reported that PIN2 has no pathogenic significance, however PEX4 and PIN3 have inconclusive results, and there may be some association between the risk of developing cancer and the presence of these variants. The objective of this work was identify the polymorphisms present in exons 2 to 4 of the TP53 gene in patients with clinical diagnosis for hereditary breast cancer. For the study, 5 mL of blood were collected from 55 female patients treated at the Hospital das Clínicas of the Federal University of Goiás. After collection, the samples were submitted to DNA extraction, Polymerase Chain Reaction (PCR) and sequencing Sanger of exons 2, 3 and 4 of the TP53 gene. The results showed that three polymorphisms were found: 31 (56.3%) had the PIN2 polymorphism, 20 (36.3%) had PEX4, and only one (1.8%) presented PIN3, some sequences presented more than one polymorphism, only 16 (29.0%) did not present any polymorphism in the analyzed regions. In addition to these three polymorphisms, an unknown polymorphism was verified in exon 3, which is not present in the databases nor in the literature, suggesting that it may be a polymorphism not yet described until now. Patients' charts were also analyzed and no association between polymorphisms and age at diagnosis, treatment response, and patient survival were identified. These results contribute to the identification of polymorphisms present in the TP53 gene and show the relatively high frequency among breast cancer patients. However, further studies are needed to better understand the influence of these polymorphisms on the TP53 gene and the risk of developing hereditary breast cancer.

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COMPARISSON BETWEEN MORPHOLOGICAL ASPECTS ON THE MAMMARY ULTRASSONOGRAPHY OF BREAST MALIGNANT NEOPLASIES AND THE IMMUNOHISTOCHEMISTRY PROFILE OF THESE TUMORS

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Objective: Compare the morphological aspects on the mammary echography of malignant tumors with the immunohistochemistry profile of these tumors and identify morphological parameters that are related in a significant manner with immunohistochemistry variants. **Methods**: We compared the ultrasonography morphological features defined according to the ACR BI-RADS – US® on its first edition (shape, posterior acoustic features, margins, lesion boundaries, echo pattern and orientation) with the immunohistochemistry profile, defined by hormone receptors (i.e. estrogen receptors (ER) and progesterone receptors (PR)), human epidermal growth factor 2–neu receptor (HER2) and Ki67 antigen of 518 malignant breast tumors. Statistically significant associations were defined as $p \leq 0.05$ on the Pearson's chi-square tests and Monte Carlo procedure. **Results**: We found a negative relation between hormone receptors (ER and PR) and the characteristics enhancement and absence of posterior acoustic features, abrupt interface and microlobulated margin. Also, we found a negative relation between ER and oval shape and parallel orientation, as well as negative relation between PR and round shape and complex echo pattern. Our results also comprehend positive association for ER and PR with the characteristics shadowing, irregular shape, echogenic halo and spiculated margins. There was also positive association between non-parallel orientation and ER. We found positive association between expression of Ki67 antigen and microlobulated margins. It was possible to demonstrate a relation among basal like tumors and posterior acoustic features (enhancement or no posterior acoustic feature), oval or round shape, abrupt interface, microlobulated margin and parallel orientation. Tumors that present shadowing or lesion boundary with echogenic halo at the ultrasonography were less likely to be identified as basal like. **Conclusion**: we found certain statistically significant associations between the immunohistochemistry profile of the tumors and the ultrasonography features.

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TNM8 BREAST CANCER CALCULATOR: A TOOL FOR BREAST CANCER STAGING ACCORDING TO THE TNM 8TH EDITION

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Objectives: To develop an APP to help healthcare professionals around the world in the breast cancer staging process according to the new AJCC criteria. **Methodology:** Extensive revision of the AJCC Cancer Staging Manual 8th Edition and the Updated Breast Chapter with a high improvement of the knowledge in this field. Creation of the medical interface for computer interface. **Results:** Development of the software named TNM8 Breast Cancer Calculator that is an updated, complete, intuitive, and user-friendly tool for Breast Cancer Staging. All data and definitions are based on the Updated Breast Chapter - AJCC Cancer Staging Manual 8th Edition, released on November 10th, 2017 that included the classic Anatomic Stage Group and the new and revolutionary Prognostic Stage Group (divided in Clinical Prognostic Stage and Pathological Prognostic Stage) with the incorporation of biomarker factors. The prognostic factors included are: Tumor Grade (G), HER2, Estrogen Receptor (ER) and Progesterone Receptor (PR). Genomic Profiles were also incorporated as a prognostic factor for eligible cases (pT1-T2 N0 M0 HER2- and ER+) in the Pathological Prognostic Stage. This App provides the quantification of the category change of the Clinical Prognosis Stage (cPS) and also the Pathological Prognostic Stage (pPS) in relation to the Anatomic Stage (AS) expressed in the Staging Line with the symbol +1, +2, +3 in case of worsening in the Prognostic Staging or -1, -2, -3 in case of improvement in the Prognostic Staging. When no symbol is shown, it is because the AS and cPS or AS and pPS are identical. This App has other function that shows Oncotype DX® / Genomic Profile field only in some setting when the genomic test is potentially indicated (pT1-T2 N0, HER2- and ER+). The TNM8 Breast Cancer Calculator got the approval of the AJCC and American College of Surgeons. **Conclusion:** The new TNM for breast cancer changed the process of breast cancer staging. These updates will provide additional precision and flexibility to the staging system but with a complex process. For a correct staging process, doctors need to use complex tables or can use the smart tools to help them in this process. TNM8 Breast Cancer Calculator is very useful for breast surgeons, surgical oncologists, medical oncologists, radiation oncologists, pathologists, radiologists, medical students, scientists, researchers, and all healthcare professionals working in the field of breast oncology.

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PROSPECTIVE STUDY OF POSTOPERATIVE WHOLE BREAST RADIOTHERAPY FOR PATIENTS WITH LARGE AND PENDULOUS BREAST: A CLINICAL AND DOSIMETRIC COMPARISONS BETWEEN SUPINE AND PRONE POSITIONS

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Introduction: Adjuvant radiotherapy is the standard treatment following breast conserving surgery (BCS). Irradiation after BCS in women with large and/or pendulous breasts is a challenge for radiation oncologists. Increased radiation related toxicity and worse cosmetic outcome was found in these patients. Prone breast irradiation aims to improve some of the technical limitations associated with treating large and pendulous breasts and it may limit radiation doses to organs at risk (OAR) such as lung and heart. **Objectives:** The goal of this study is to compare dosimetric parameters in prone versus supine position in a cohort of women with pendulous breasts receiving Radiotherapy after conservative surgery and the severity of cutaneous toxicity in these patients. **Methods:** Early-stage breast cancer patients with large or pendulous breasts undergoing BCS participated in this study. CT-based treatment plans were made in each position, and various dosimetric parameters for the breast and OAR were calculated to compare the supine and prone radiotherapy plans. The actual treatment was delivered in the position regarded as better. The patients were followed during the treatment to evaluate the skin and the grade of radiodermatitis were registered. **Results:** From 2016 to 2017, 26 patients were prospectively accrued. The median lung dose and the V20 (lung volume that receives 20 Gy) were significantly lower in the prone position ($p<0.0010$). The homogeneity index and the contralateral breast dose were significantly lower in the supine position ($p=0,006$ and $p< 0,01$ respectively). The other variables (V25 and heart median dose) showed no significant differences between two positions. By comparing two plans, the prone position was chosen in 73% of the patients. In the prone position, grade 2 dermatitis were seen in 26%, whereas 42.8% of patients treated in the supine position had grade 2 and no cases of grade 3 dermatitis, although without a statistical significance ($p=0.33$). **Conclusions:** Prone breast irradiation lowers lung dose significantly when compared to supine position. Although without a statistical significance, there was a trend towards a reduction in skin dermtititis when patients were treated in prone position.

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HAND2 AND ER EXPRESSION IN BREAST CANCER

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Objectives: To verify the immunohistochemical expression of Heart and Neural Crest Derivatives Expressed Transcript 2 (HAND2), a tumor suppressor protein, .in breast tissues with and without breast cancer. To correlate the expression of HAND2 with estrogen receptor (ER). **Methods:** In this case-control study, 19 formalin–fixed, paraffin-embedded tissues were obtained for pathological archives analysis. Tissue sections of breast tissue derived from benign conditions (n=10) and breast cancer (n=9) were analyzed for the intensity of the staining with 3,3'-diaminobenzidine using rabbit polyclonal antibody against HAND2 (Ab60037), at dilution 1:50 at pH 9; ER was analyzed using clone 1D5, monoclonal, Dako) diluído a 1/100. ImageJ software with "color deconvolution" was used for analysis of the expression of these proteins. Statistical analysis was performed using unpaired t-test and correlation of Pearson . The sample size was calculated in order to have a power of 95%, an alpha error of 1% to identify an increase in the primary outcome measure from 15 in the control group to 44 in the experimental group. **Results:** HAND2 expression (mean±SD) in the breast tissue was 15.5±1.9 (cancer) versus 44.9±7 (breast cancer) (p=0.0006). Its expression was present in the nuclear and cytoplasmic compartments of the cells. No correlation was observed between ER and HAND2 (Pearson r = -0.28 (95%CI -0.6–0.22; p=0.2). **Conclusions:** The immunoexpression of HAND2 is reduced in breast cancer, compared with normal breast tissue. The expression of HAND2 is not correlated to ER expression These findings may guarantee further research as a potential independent prognostic biomarker.

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EFFECTIVENESS OF DIFFERENT ACCELERATED PARTIAL BREAST IRRADIATION TECHNIQUES FOR THE TREATMENT OF BREAST CANCER PATIENTS: SYSTEMATIC REVIEW USING INDIRECT COMPARISONS OF RANDOMIZED CLINICAL TRIALS *[EFFECTIVENESS OF DIFFERENT APBI TECHNIQUES]*

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Background: Numerous accelerated partial breast irradiation APBI techniques are available for clinical practice. This systematic review was conducted to compare the effectiveness of different APBI techniques for the treatment of breast cancer patients. **Methods:** Systematic review of randomized controlled trials of APBI versus WBI. The data from APBI studies were extracted for the analyses. Indirect comparisons were used to compare different APBI techniques. **Results:** Ten studies fulfilled the inclusion criteria. A total of 4343 patients were included, most of them with tumor stage T1-T2 and N0. Regarding APBI techniques, six trials used external beam radiation therapy; one intraoperative electrons; one intraoperative low-energy photons; one brachytherapy; and one external beam radiation therapy or brachytherapy. The indirect comparisons related to 5-years local control and 5-years overall survival were not significantly different between APBI techniques. **Conclusions:** Based on indirect comparisons, no differences in clinical outcomes were observed among diverse APBI techniques in published clinical trials that formally compared WBI to APBI. However wide confidence intervals and high risk of inconsistency precluded a sound conclusion. Further head-to- head clinical trials comparing different APBI techniques are required to confirm our findings. Studies comparing different techniques using individual participant data and/or real-life data from population-based studies/registries could also provide more robust results.

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THE ROLE OF PALLIATIVE RADIOTHERAPY IN LOCALLY ADVANCED BREAST CANCER REFRACTORY TO NEOADJUVANT CHEMOTHERAPY AND UNRESECTABLE

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Objectives: Locally advanced breast cancer (LABC) is a major health problem in developing countries, including Brazil. The standard treatment for LABC is neoadjuvant chemotherapy, with or without anti-Her2 therapy, followed by surgery, radiotherapy (RT), and adjuvant systemic treatment if appropriate. However, there are few data in the literature addressing alternatives when neoadjuvant chemotherapy fails to reduce the tumor for surgery. Nearly one third of LABC are resistant to multimodal neoadjuvant treatment remaining unresectable. As an alternative to downsize tumor and allow surgical removal, palliative radiotherapy has been reported as an option. The aim of this study is to verify the role of palliative radiotherapy in the treatment of LABC, once considered unresectable and not responding to neoadjuvant chemotherapy. **Methods:** It is a retrospective study including 25 patients who had non-metastatic LABC treated with neoadjuvant chemotherapy and who were not eligible for surgical resection; these patients were submitted to salvage radiotherapy between January 2017 and January 2018 at Araujo Jorge Hospital and Cebrom clinic. All patients were followed by photography analysis and by a single observator. **Results:** During one year, 25 patients were included, with a median age of 55 (30–80) years and the average was 52 years old. The most frequent clinical stages were IIIA and IIIB, corresponding to 18.8% and 81.2%, respectively, characterized by bleeding and secretion, mostly with pain; mean tumor size was 14 (3–25) cm, and 22 patients (88.4%) had nodal involvement. Neoadjuvant chemotherapeutic regimens were prescribed to 88% of the patients. Radiation dose initially prescribed was 70 Gy divided into 35 fractions, however the average dose received was 50,2Gy; At the end of radiation therapy, the median tumoral response was 55% (10–100%) and the average was 51%. After 104 days post RT the average tumor response was 86%. After 70 days and 120 days post radiotherapy, 2 patients (8%) had their tumors downsized and underwent mastectomy, respectively. The overall survival will be still analysed. **Conclusion:** Neoadjuvant radiotherapy is an effective treatment to downsize breast cancer tumors with low or absent response to chemotherapy, as well as coping with local control. In this study, the radiation treatment was responsible for 86% of tumor downsize, with great improvement of the bleeding and tumor secretion.

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THE IMPACT OF RADIODERMATITIS IN QUALITY OF LIFE OF PATIENTS WITH BREAST CANCER DURING TREATMENT: A PROSPECTIVE LONGITUDINAL STUDY

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Objective: To investigate the influence of radiodermatitis severity on the quality of life (QOL) of women with breast cancer (BC) throughout radiotherapy (RT). **Methodology:** A prospective longitudinal study conducted with 100 BC patients evaluated weekly during RT and three months after treatment. The questionnaire The Dermatology Life Quality Index (DLQI) and Radiation Therapy Oncology Group (RTOG) Scale were used to evaluate QOL and radiodermatitis, respectively. The Generalized Estimated Equations (GEE) were used to examine the association between the total score of QOL and their domains (symptoms and feelings, daily activities, leisure, personal relationships, work/school and treatment), time of RT and the radiodermatitis score, controlled by confounding factors (age, years of study and economic classification). Estimated marginal means and 95% confidence intervals were compared pairwise by applying Sequential Sidak for multiple tests. **Results:** The total QOL score, as well their domains (work/school, leisure, daily activities, symptoms and feelings) were significantly associated with the time of RT ($p \leq 0.001$), with the radiodermatitis score ($p \leq 0.001$) and with the interaction time of treatment and radiodermatitis score ($p \leq 0.001$). When assessing the post-hoc (sidak sequencial), it was identified that the worst QOL scores were in the presence of grade 3 (mean = 6.00) in T3 and grade 4 (6.50; 7.00) in T5 and T6, respectively, and this difference was statistically significant. Considering the domain signs and symptoms, we recognized a worse score in the presence of grade 4 (3.00) in T6. Regarding to the work and school domains and daily activities, the worst scores were identified in T5, in patients with grade 0 (4.00) and grade 3 (2.50), respectively. The leisure domain had a worse score in T3 in grade 3 (3.00). **Conclusion:** Women with BC had a negative impact on QOL during RT, with the greatest impact related to severe radiodermatitis. Actions aimed at minimizing the impairment in QOL need to be adopted to transform this exhausted process, less traumatic and easier to finalize.

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A PROTECTIVE EFFECT OF MORNING RADIOTHERAPY ON SKIN TOXICITY IN PATIENTS WITH BREAST CANCER

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Objective: To evaluate the predictive factors of radiodermatitis, including the time of day in which the patients were treated. **Methodology:** A prospective cohort study conducted with 100 breast cancer (BC) patients evaluated weekly during radiotherapy (RT) and three months after treatment. Survival analysis considering as the end point the occurrence of radiodermatitis grade ≥2, according to Radiation Therapy Oncology Group (RTOG) was conducted by univariate and multivariate Cox regression. **Results:** In the multivariate analysis, RT in the afternoon (0-3 pm) (HR= 1.566, p=0.042), was significantly associated with the early occurrence of radiodermatitis, when compared with the morning (7-10 am), indicating a potential effect of chronotherapy regarding this adverse event. In the univariate and multivariate analysis, moderate brown skin phototype (HR=1.586, p=0.042; HR=1.706, p=0.022, respectively) and dark or black (HR=4.517, p≤0.001; HR = 5.336, p≤0.001, respectively) when compared with white or light white was significantly associated with the early occurrence of radiodermatitis. The tangential field separation >21 cm (HR=2.550, p=0.009, HR=2.923, p=0.003), that in women submitted conservative surgery indicates indirectly large breast size, when compared tangencial field separation <18 cm was also significantly associated with the early occurrence of radiodermatitis. **Conclusion:** Women with BC, especially when submitted to conventional techniques, common in low-income countries and under development and those with the presence of these risk factors (Dark Brown or black phototypes and tangential field separation >21 cm in women submitted conservative surgery) should be submitted to RT in the morning. It is also suggested the development of researches that test products that can act directly on the pathway of production of melanin, aiming to prevent this adverse event.

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EXPRESSION OF PRO- AND ANTIANGIOGENIC VEGF-A ISOFORMS AND SPLICING REGULATORY FACTORS IN BREAST CANCER

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Objectives: The aim of this work was to analyze the expression of pro- and antiangiogenic *Vascular Endothelial Growth Factor* (*VEGF-A*) gene isoforms generated by alternative splicing in samples of breast cancer and non-tumor adjacent tissues, and to investigate the involvement of genes encoding the regulatory proteins SRPK1, SFRS1, SRSF5, and SRSF6 in the *VEGF-A* gene alternative splicing. **Methods:** The expression of *VEGF-A*$_{165}$, *VEGF-A*$_{165}$*b* isoforms and genes encoding the splicing regulatory proteins of 50 breast cancer samples and 43 adjacent non-tumor tissues were analyzed by real-time quantitative PCR. The values of relative quantification (RQ) in tumors were analyzed by Wilcoxon Signed Rank Test. Spearman correlation was used to evaluate the correlation between the expression of the genes encoding regulatory proteins and the *VEGF-A* isoforms. Binary Logistic regression was used to analyze the association between the expression of *VEGF-A* isoforms and metastasis. P≤0.05 were considered significant. **Results:** The overexpression of *VEGF-A*$_{165}$ (median RQ=7.7, p<0.0001) and *VEGF-A*$_{165}$*b* (RQ=2.9, p<0.0001) isoforms was observed in breast tumors compared to adjacent non-tumor tissues. The expression of *SRPK1, SFRS1, SRSF5*, and *SRSF6* genes was significantly increased in breast tumors compared to non-tumor tissues (p<0.0001). The expression of *SFRS1*, *SRSF6*, *SRSF5* and *SRPK1* were positively correlated with both isoforms of *VEGF-A*. Down-expression of antiangiogenic isoform *VEGF-A*$_{165}$*b* was significantly associated with metastasis (OD=4.93; 95%CI 1.03–23.63; p=0.03). **Conclusion:** The overexpression of both pro- and antiangiogenic *VEGF-A* isoforms in breast cancer can influence in the treatment of this tumor type, because the currently used anti-VEGF-A therapies target both isoforms, which could prevent the antiangiogenic activity of VEGF-A$_{165}$b. The splicing regulatory factors SRSF1, SRSF6, SRSF5, and SRPK1 can contribute to alternative splicing of the *VEGF-A* gene. The expression of antiangiogenic isoform *VEGF-A*$_{165}$*b* is a relevant factor for the prognosis of patients with breast cancer.

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PHARMACOKINETIC MODEL FOR QUANTITATIVE EVALUATION OF THE EPR EFFECT ON ALBUMIN-BASED NANOCARRIERS

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Understanding the dynamics of the tumor microenvironment is fundamental for the success of new anti-cancer therapies based on tumor targeting drug delivery. It is known that, in an effort to guarantee a continuous flow of oxygen and nutrients, the tumor cells emit molecular signals (VEGF, Vascular Endothelial Growth Factors) to the neighboring endothelial cells, inducing the formation of new blood vessels. It is also known that the endothelium of these new blood vessels shows abnormalities, like intercellular fenestrations, which allow an enhanced permeability and retention of nanostructures within the tumor extracellular matrix – an effect known as EPR (Enhanced Permeability and Retention). However, although this effect is known for over 30 years, very little is known about its kinetics. Therefore, we designed a 4-compartment pharmacokinetic model in order to quantitative evaluate (both analytically and numerically) of the role of the EPR effect on the absorption of multifunctional nanocarriers by tumor tissues. Aliquots (150 uL) of colloidal suspensions containing albumin-based nanocarriers were retro-orbitally administered to a control group (healthy Swiss mice) and to a treatment group (murine-Ehrlich tumor-bearing Swiss mice). Our nanocarriers, named after MalbIR, consisted of manganese ferrite (MnFe2O4) superparamagnetic nanoparticles associated both with molecules of bovine serum albumin (BSA) and with molecules of IR-780 iodide, a near infrared (NIR) fluorescent dye with chemotherapeutic action. The time-evolution of the amount of IR-780 (in pmol) within the retro-orbital, tail and tumor regions was determined via FMT (Fluorescence Molecular Tomography) during the first 8 days after the administration. According to the experimental data, in the first 48 h, the albumin-based nanocarriers accumulate within the tumor region presumably due to: the EPR effect (passive targeting); and to the affinity between BSA (and/or IR-780) molecules and tumor cell membrane receptors (active targeting). The results also enabled the determination of the pharmacokinetic model parameters (first-order intercompartment exchange rate constants, in h-1), consequently bringing a better understanding of the EPR effect kinetics for this type of nanocarrier. Intratumoral accumulation (via EPR effect and presumably via other internalization mechanisms) was clearly observed. The time-evolution profile of the amount of IR-780 in different body regions (retro-orbital sinus, tail and tumor) could be successfully determined by FMT. Albumin-based nanocarriers have long blood half-lives (post-distributive phase), with no toxicity concerns at the assessed concentrations. In particular, our nanocarriers (MalbIR, i.e. MnFe2O4 nanoparticles + BSA + IR-780) show delivery efficiencies (DE) around 15% of the initial dose (ID): about 5 times higher than the DE measured for the free drug (free IR-780); and about 21 times higher than the median DE value reported by 232 papers over one decade (2005–2015).

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THE RADIATION THERAPY IN OCCULT PRIMARY BREAST CANCER: CASE SERIES

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Objectives: Approximately 0.1–0.8% of all breast cancers is occult. The occult primary breast cancer (OPBC) is a breast cancer that first presents through regional nodal or distant disease without clinical or mammographic evidence of disease in the breast. Management of OPBC has been inconsistent and controversial since its initial description by Halsted in 1907, but the rarity of this form of breast cancer has made it difficult to standardize management. Furthermore, the natural history of OPBC remains unclear: most case series have reported outcomes that are better than those of non-occult breast cancers with similar nodal involvement, but a few have reported outcomes that are comparable or significantly worse. Here, we describe the management and outcomes of OPBC patients treated at a private and a public institution. Reviewing the management and outcome of OPBC patients we hope to elucidate both the benefits and disadvantages associated with a multidisciplinary treatment approach to OPBC. **Methods:** We described a four case series of women diagnosed with OPBC between 2015 and 2017 at Araujo Jorge Hospital and Cebrom Clinic, as well as the multimodal treatment received. All four patients were followed by a single observator. **Case Report:** The patients' ages ranged from 45 to 75 years, with a mean age of 60 years. The four patients presented with a palpable mass at the axillar area and all of them underwent level I and II axillary lymph node dissection pre radiotherapy. The pathologic results are invasive ductal carcinoma; 3 patients are grade 3 and 1 patient is grade 2; the imuno histologic results are 2 patients were luminous and 2 patients were triple negative; microscopic features revealed metastatic breast carcinoma in all of the four cases. All patients were submitted to adjuvant chemotherapy and then.

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IR-780 BASED-NANOPARTICLE CYTOTOXIC EFFECT ON MURINE BREAST CANCER CELLS (EHRLICH)

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Objectives: The aim of this study was to evaluate the cells viability of the murine breast cancer cells (Ehrlich) after treatment with magnetic nanocarriers (MALBIR). **Methodology:** Ehrlich's ascites carcinoma cells were aspirated from the peritoneal cavity of the animals and washed with 1x PBS solution, and then maintained in a humidified atmosphere for 24h at 37°C in 5% CO_2. RPMI-1640 medium was supplemented with 10% FBS, 1% penicillin/streptomycin and 0.3% amphotericin. The MALBIR was used as treatment for 24h, which consist of ferrite-based magnetic nanoparticles, bovine albumin proteins and IR-780 iodide molecules, forming an aggregate nanostructure with a diameter around 100nm. Because IR-780 is cytotoxic, all concentration used (0.0; 0.437; 0.875; 1.75; 3.5; 7; 14) were based in quantity of the IR-780 ($\mu g.mL^{-1}$) present in nanocarrier. The MALBIR cytotoxic effects were evaluated using the MTT assay with Ehrlich tumor cells as described by Mosman (1983). The results as presented as mean ± SD obtained from three independent experiments each done in four replicates. Statistical significance was considered at $p<0.05$ performed by one-way ANOVA with Tukey post test. The IC50 (IR-780 concentration in nanocarrier that results in a 50% reduction in cellular viability) was acquired by dose-response curves (nonlinear regression curves from sigmoidal dose-response) using GraphPad Prism 5 for Windows. **Results:** The IR-780 present in MALBIR has a statistical significantly effect inducing cell death in a dose dependent manner on Ehrlich cells. At concentrations of 3.5, 7 and 14$\mu g.mL^{-1}$ obtained a significantly different result from negative control with $p<0.001$. By nonlinear regression curve was estimated an IC50 value on Ehlich cells of 14.2 ± 1.7$\mu g.mL^{-1}$. Similar results had previously been found for Sarcoma-180 tumor cell line and L-929 normal cell line treated with this same nanocarrier. **Conclusions:** In summary, MALBIR treatment has significant cytotoxic activity on Ehrlich cells line when compared to the reference negative control. Thus, these results suggest that the MALBIR treatment may share a distinct and important dose-dependent biological property. Additional studies are needed to compare normal cell line, determine the molecular mechanisms and to evaluate the potential *in vivo* anticancer activity of the MALBIR. Nevertheless, the nanocarrier shows potential for synergetic effect between the chemotherapeutic agent IR-780 and the nanoparticles, if magnetic hyperthermia treatment is also performed, that could decrease even further the IC50 of the nanoparticle.

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TIME BETWEEN DIAGNOSIS AND BEGIN OF THE TREATMENT IN A PUBLIC BRAZILIAN HOSPITAL IN SÃO PAULO

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Objectives: Breast cancer affects about 59,000 Brazilian women annually according to data from INCA 2018 (National Health Institute) and almost 55% of patients are diagnosed in advanced stages. In most Brazilian câncer centers the treatment is made only with the definitive diagnosis (biopsy). It can lead to a delay of 5 to 8 months and may even take longer. On November 22, 2012, a federal law established in 60 days the maximum period between the diagnosis and the first treatment of any malignant disease. Pérola Byington Hospital is one of the most important cancer centers specialized Breast Cancer treatment in Brazil. In 2005 a model of visits based on quick diagnosis and treatment was implemented named CARE (Centro de Alta Resolutividade – High Resolutivity Center). This model is based in "One Stop Clinic" approach contemplates the integration between the professionals and the physical space in the same physical area. In this model a trained physician can have the results in the same day of mammography and ultrasonography. Biopsy is performed in the same day and after 2 or 3 weeks our pathologists trained in mammary pathology can give us the results with the immunohistochemistry analyses. With this approach, we have been able to optimize resources and gain the agility to diagnose breast cancer suspects, whether palpable or not. Many breast cancer cases require primary (neoadjuvant) treatments since many diagnoses were already made in late phases. In 2016, there was a need for integration with the clinical oncology service, allowing a clinical visit by the oncologist in the same day and the possibility to initiate the treatment between 7 to 10 days. This model based on a single visit requires an integrated and trained multidisciplinary team, not only in the treatment of the disease but also training in this model of approach. The idea of this model was born due to the observation that patients in Brazil usually spent a long time in lines to the first visit and had to wait long time to perform the specific exams (mammography/ultrasound) and then a long time to have an evaluation with the specialist and more time spend to undergo invasive diagnostic procedures. Usually patients had to return 3 or 4 times to have their diagnosis made and this process could take 2 or 3 moths to start the treatment. With our approach we have been able to reduce the waiting time substantially, since all the tests are made on the same day (including biopsy), anticipating the diagnosis and only for this reason reducing the number of advanced cases. Since the prognosis is closely linked to the stage, this approach can substantially increase disease cure rates. Our Center annually treats about a thousand new cases of breast cancer and about 1400 surgical procedures are required. We have been spreading this idea promoting workshops, continued medical education; training courses in mammography and ultrasound diagnosis and medical training in percutaneous biopsies, both guided by ultrasonography and stereotactic. Our mission is to promote humanized treatment and achieve early diagnosis and timely treatment to achieve a better prognosis. **Methodology:** This study was performed at the Pérola Byington Hospital evaluating patients treated at our hospital from 2011 to 2017. We have reviewed the cases diagnosed with breast cancer at the hospital and the date of diagnosis and the beginning of treatment were evaluated, being it surgical or performed chemotherapy. **Results:** In this period 6,488 cases of breast cancer were included in our evaluation. The mean between the initial histological or cytologic diagnosis and the beginning of the treatment was calculated in each year: In 2011 63.82% of our cases had their first treatment beyond 60 days. In 2017 most of our patients were treated in at least 60 days (67.23%). We know that the mean can be very variable if one of the numbers is too large or too small and because of that we have been able to median between the diagnosis and the first treatment. In 2011 the median was 76, in 2012 was 83 and this number was going down year by year and in 2017 the median is 53 days. **Conclusions:** In our Hospital the "One Stop Clinic" approach have changed the way of treating the patients allowing more agility in the treatment of breast cancer including quick diagnosis and initiation of treatment as soon as possible.

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THE VALUE OF STEREOTACTIC VACUUM-ASSISTED BIOPSY IN THE INVESTIGATION OF MICROCALCIFICATIONS IN 1354 PATIENTS IN PUBLIC BRAZILIAN HOSPITAL

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Objectives: The gold standard for breast biopsy procedures is currently an open excision of the suspected lesion. However, an excisional biopsy inevitably makes a scar. The cost and morbidity associated with this procedure has prompted many physicians to evaluate less invasive, alternative procedures. More recently, image-guided percutaneous core-needle biopsy has become a frequently used method for diagnosing palpable and non-palpable breast lesions. Although sensitivity rates for core-needle biopsy are high, it has the disadvantage of histological underestimation, which renders the management of atypical ductal hyperplasia, papillary lesions, and fibroepithelial lesions somewhat difficult. Stereotactic vacuum assisted breast biopsy (VABB) was developed to overcome some of these negative aspects of core-needle biopsy. VABB allows for a sufficient specimen to be obtained with a single insertion and can provide a more accurate diagnosis and completely remove the lesion under real-time ultrasonic guidance. The advantage of complete lesion removal with VABB is to reduce or eliminate sampling error, to decrease the likelihood of a histological underestimation, to decrease imaging-histological discordance, to decrease the re-biopsy rate, and to diminish the likelihood of subsequent growth on follow-up, especially when stereotactic VABB is used to investigate microcalcifications. This method is expensive but cost effective when used to investigate microcalcifications classified as *BI-RADS* 4 and 5. **Methodology:** We performed a review in 1,354 patients with suspicious mammography microcalcifications, classified as *BI-RADS* 4 or 5 that were seen in Perola Byington Hospital from July 2012 to July 2017 in São Paulo-Brazil. We have used a Hologic Lorad Multicare Platinum Stereotactic Prone Breast Biopsy and a Surus Pearl (Hologic, Malbolrough, Massachusetts, USA), with *gauge* 9 probe. Four to eight fragments (median of 6) were obtained with the placement of a metal clip in the bed that the biopsy was performed, and histopathological analysis was made. **Results:** The histopathological study of the lesions revealed benign alterations in 956 (68%) of our patients. The findings were positive for malignancy in 358 patients (29%) and the precursor lesions were diagnosed in 40 (3%). In 81 cases (5.9%) the findings were discordant. The sensitivity of the method was 84.4%, specificity was 96.1%, false negative rate was 4.5%, positive predictive value (PPV) was 89.8%, negative predictive value (NPV) was 93.8%. In literature review the sensitivity varies 91.5–100%, specificity 81.9–110%, false negative rate 0–3.3%, PPV 92.2–100% and NPV 80.5–99.5%. All patients with positive or discordant cases underwent surgical treatment to increase the margin or complete removal of the lesion. **Conclusions:** The VABB is an outpatient procedure that avoids hospital admissions for diagnostic elucidation in most of cases suspected of malignancy. It has high predictive value in both benign and malignant lesions, guiding therapeutic planning. In addition to presenting the cost lower than the surgical biopsy it indirect increases the supply of hospital beds for cancer treatment.

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PYODERMA GANGRENOSUM: REPORT OF A CASE INVOLVING THE BREAST

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Background: Pyoderma gangrenosum (PG) is an inflammatory, ulcerative skin disorder characterized at histopathology by the presence of neutrophils in the skin. The disease is a rare but serious ulcerating skin disease, the treatment of which is mostly empirical. The condition may either develop spontaneously or in association with surgical trauma or systemic or neoplastic diseases. Pyoderma can present to a variety of health professionals and several variants exist that may not be recognized immediately. This can delay the diagnosis and have serious clinical consequences. Clinical presentation varies, but is basically characterized by ulcerated, painful, dark red or purple skin lesions with irregular, inflamed and raised borders and a necrotic base, with single or multiple small abscesses. The mainstay of treatment is long term immunosuppression, often with high doses of corticosteroids or low doses of ciclosporin. Recently, good outcomes have been reported for treatments based on anti-tumour necrosis factor α, and infliximab proved effective in a randomized controlled trial. **Case report:** This report refers to a female patient who was 54 years old and that was seen in Perola Byington Hospital. She presented with spontaneous pyoderma gangrenosum and the lesions were seen onher right breast, left axilla, left eyelid and chin. She was submitted to a skin biopsy in 07/06/2017: chronic non-specific inflammatory disease. After the clinical and pathologic result, the hypothesis of PG was made, and she received systemic corticosteroids with prednisone 60 mg once a day orally for 30 days and after that more 90 days with prednisone 40mg. She had responded very well, and the lesions disappeared after 4 months. **Discussion:** The clinical course of pyoderma gangrenosum can be unpredictable and highly variable from onset and throughout progression of the condition; hence diagnosis of this pathology may constitute a challenge. Many patients develop painful lesions that grow progressively, accompanied by fever. In others, lesions are chronic, with ulcerations that progress slowly. Pathogenesis remains to be fully clarified. Since diagnosis is reached exclusively on the basis of clinical characteristics, it is very important to take this disease into consideration when evaluating differential diagnoses.

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STAGE AND IMMUNOHISTOCHEMISTRY OF EIGHT THOUSAND CASES OF BREAST CANCER TREATED IN A BRAZILIAN REFERENCE CENTRE

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Objetives: Breast cancer affects about 59,000 Brazilian women annually according to data from INCA 2018 (National Cancer Institute) and 14,388 deaths are related to the disease. There are few data about the stage of the disease in our Country. Most of the cases are confirmed in late stages mainly due to the delay in diagnosis and time to initiate the treatment. Pérola Byington Hospital is one of the most important cancer centers specialized breast cancer treatment in Brazil and we are responsible for treating about a thousand new cases of breast cancer annually. In 2005 a model of visits based on quick diagnosis and treatment was implemented named CARE (Centro de Alta Resolutividade – High Resolutivity Center) based on a model of One Stop Clinic. This approach can lead to a downstage of breast cancer stage once the diagnosis and the treatment is substantially quicker. In this study we have evaluated the stage and immunohistochemistry (IHC) subtype of the patients treated in our institution. **Methodology:** In 2016 we have created a web-based system that helped us to input information about the breast câncer cases treated in Pérola Byington Hospital. This program helped us to better understand our cases of breast cancer regarding the initial stage and the subtype of breast cancer based on IHQ. The main idea was to analyze our data and compare it with the national data and the international literature. **Results**: We have reviewed 8,420 cases of breast cancer treated in our Hospital between 2011 and 2017. We were able to access the clinical stage in 8,096 cases. The distribution was 4.9% of stage 0, 22.9% of stage I, 39.2% of stage II, 30% of stage III and 3.1% of stage IV at the time of diagnosis. The data regarding the immunohistochemistry subtype was able to be recovered in 7,934 patients. Most of our cases were luminal (A or B) – 56.4%. There was 10.3% of both Her2 and hormonal receptor positive and 7.9% of only Her2 positive. The prevalence in our patients of triple negative disease was 25.4% much higher than the literature (around 15%). We have also looked at the Her2 doubtful (Her2 2+) where usually you need a specific test to define it (CISH or FISH test). There were 1,450 cases in this condition and in 28.6% of them the test was not made. Among the cases that made the test we found that 74.7% resulted in CISH negative, 14.1% positive and 11.2% were still inconclusive. The Ministry of Health forces all the Her2 positive in the IHC (3/3) to be tested with a FISH or a CISH test. We found 616 cases of Her2 positive in the IHQ test and negative when CISH was made (7.2%). **Conclusions:** In our analysis we have found that our institution has more cases of triple negative disease than reported in the literature. Based on national statistics we had substantially fewer cases of advanced disease (only 30% of stage III compared to 60% of INCA report). Probably these findings are related to the quick diagnosis and immediate treatment (surgical or neoadjuvant). There was 17.4%% of cases found to have Her2 uncertain and most of them were tested and became a Her2 negative when CISH was performed (74.7%). We have to look carefully to those patients with Her2 positive in IHC but negative when CISH was done specially because they do not receive trastuzumab according to Brazilian Ministry of Health guidelines a a further study will be made to evaluate that.

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ANALYSIS OF 41 PATIENTS WHO UNDERWENT ADENOMASTECTOMY AFTER A BREAST CANCER DIAGNOSIS IN A PUBLIC BRAZILIAN HOSPITAL

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Objectives: to describe the indications and complications of 41 patients with breast cancer submitted to skin-sparing mastectomy with or without preservation of the areola-papillary complex at a Public Hospital in Brazil. **Methods:** We've performed a retrospective analysis of 41 patients diagnosed with breast cancer that were treated from January 2008 to May 2015 and had adenomastectomy at Pérola Byinton Hospital. Description data is shown. **Results:** The age of the patients ranged from 28 to 62 years, with a mean of 46 years. Invasive ductal carcinoma was diagnosed in 24 cases (58.4%), the invasive lobular type in 3 cases (7.3%). The other 14 (34.1%) cases were patients with multicentric ductal carcinoma *in situ*. In the invasive tumors there was predominance of hormone receptor positive (81.4%). In the preoperative clinical staging predominant was TisN0M0 in 31.7% cases. The preservation of areola-papillary complex occurred in 28 cases (68.2%). The sentinel lymph node biopsy it was made in 70.3% cases the invasive tumors. Regarding immediate repair reconstruction, the expander prosthesis was used in 38 cases (92.6%). Among the complications, there were no reports of bruising or infection. Extrusion of the expander prosthesis occurred in only 2 cases (4.8%). After a mean follow-up of 48 months, no local recurrences were reported. **Conclusions:** Skin sparing mastectomy with or without preservation of the areola-papillary complex is a safe option in the oncologic treatment of *in situ* and invasive cancer (T1 and T2), especially in multicentric forms in patients with small breasts. Immediate reconstruction was possible in all patients. The main complication observed was the late extrusion of the prosthesis in 4.8% of cases.

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BIOMARKER EXPRESSION IN BREAST CANCER. CORRELATIONS WITH OUTCOME FOLLOWING NEOADJUVANT CHEMOTHERAPY

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Purpose: Breast cancer is the most common type of cancer in women in Brazil and worldwide, corresponding to around 20% of all malignant tumors in women. Neoadjuvant chemotherapy improves survival rates in around 30% of patients with locally advanced disease. This study evaluated biomarker expression in tumor samples and assessed outcome variables following neoadjuvant chemotherapy. **Methods:** This longitudinal, analytical study included 86 patients of 28 to 80 years of age who were evaluated according to clinical data, histology and laboratory analysis of selected markers. **Results:** Positivity for estrogen (ER) and progesterone receptors (PR) was 58.54% and 65.79%, respectively. The tumors were predominantly negative for the HER2, CK5/6, EGFR, p53 and Topo II biomarkers and predominantly positive for the Ki-67, PTEN and IGF-1 biomarkers. The results obtained for ER showed associations with PR (p=0.002), Ki-67 (p=0.049), CK5/6 (p=0.027) and p53 (p=0.032). Likewise, there were associations between HER2 and Ki-67 (p=0.028) and between Ki-67 and Topo II (p=0.001). Eighteen patients (20.93%) achieved complete clinical response, while 9 (10.47%) achieved pathologic complete response (pCR). There was an association between pCR and the HER2 (p=0.05) and Topo II (p=0.007) biomarkers. More patients with HER2 tumors (40%) achieved pCR compared to those with the other subtypes, while none of the patients with luminal A tumors achieved pCR (p=0.043). **Conclusions:** In this study, HER2 and Topo II expression, as well as tumors classified as HER2 subtype or luminal A subtype were predictive of pCR.

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OBESITY INCREASES THE RISK OF BREAST CANCER IN POSTMENOPAUSAL WOMEN?

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Objective: To describe the impact of obesity on the increased risk of breast cancer in postmenopausal women. **Methodology:** The search for scientific articles was carried out in the databases: PubMed and Scopus. Articles published in English in the last five years have been selected. The surveys were conducted with the following combinations: ("*Obesity*"[*MeSH Terms*] *AND "Breast Neoplasms"* [*MeSH Terms*] *AND* "postmenopausal women"*[All Fields]*). Criteria for definition of obesity was the Body Mass Index (BMI) ≥ 30. **Results:** We included 25 studies. Most epidemiological studies report that women with obesity and overweight are at higher risk of developing postmenopausal breast cancer. BMI ≥ 30, at the time of diagnosis, is associated with more advanced stages of breast cancer with more aggressive tumor characteristics, larger tumor size and worse histological grade. An increase of 5 units in BMI is associated with a 12% increased risk of breast cancer. Among postmenopausal women, obesity has a 20% to 40% increased risk of developing breast cancer compared to women of normal weight. The greatest risks are observed mainly in women who have never used menopausal hormone therapy. Weight gain after diagnosis indicated an increase in mortality rates and obesity would be linked to an increased risk of secondary neoplasms. Obese women compared to normal weight women had a 21–41% higher overall mortality risk and a 25–68% risk of breast cancer mortality, depending on how much time had elapsed since the diagnosis of the disease. Another study suggests that increasing body fat percentage 6 months after breast cancer surgery is an important predictor of post-menopausal distant metastases. In another study, high BMI was protective in premenopausal women (OR=0.14 per; 95%CI 0.02–0.77), while in postmenopausal women it was a risk factor for development of breast cancer (OR=2.39 per; 95%CI 1.02–5.55). One explanation for the increased risk is that obesity leads to the release of cytokines into the bloodstream that affect the metabolism of breast cancer cells, making them more aggressive. Further, the impact of obesity on risk differs by tumor hormone receptors status and, among postmenopausal women, use of hormone replacement therapy. **Conclusion:** Obesity is associated with an increased risk of postmenopausal breast cancer.

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BRCA1 AND MICRORNAS 7, 10B, 205AB, 218A EXPRESSION AS PROGNOSTIC MARKERS IN PRIMARY BREAST CANCERS – A RETROSPECTIVE COHORT STUDY

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Micro-RNAs (miRs) are post-transcriptional regulators of gene expression involved in several important biological processes. BRCA1 is a tumor suppressor gene and BRCA1-silent breast cancers (BC) tend to be more aggressive. Since BRCA1 may be regulated at post-transcriptional level by miRNAs, the purpose of this study was to evaluate the prognostic value of human miR-7, miR-10b, miR-205ab and miR-218b and BRCA1 expression levels in BC. A set of 36 triple-negative (TN) and 56 nontriple-negative (NTN) breast tumors was analyzed. Total miRNA was extracted from formalin-fixed paraffin-embedded (FFPE) BCs collected from the Pathology Department of Araújo Jorge Hospital-ACCG (Goiânia, Goiás, Brazil). MiRs expression was quantified by Quantitative Real-Time PCR (qRT-PCR) and BRCA1 expression was evaluated by immunohistochemistry (IHC). The present study was approved by the institutional Ethics Committee of Araújo Jorge Hospital (Report n° 948.930, 2015). The relative expression levels of miRs and clinic pathological features of breast cancers were compared. Overall survival in 60 months was 72.8%, and it was influenced by TNBC phenotype (p=0.044), tumor size (p=0.007), lymph node involvement (p=0.038), distant metastasis (p=0.0008), BRCA1 negative expression (0.039), miR-7 (p=0.026) and miR-10b (p=0.011) overexpression. MicroRNA hsa-miR-7 overexpression was associated with larger tumors (>2 cm) (p=0.041), higher histological grade (p=0.028), TN phenotype (p=0.012), BRCA1-negative expression (p=0.047) and worse survival (p=0.026). Overexpression of hsa-miR-10b was associated with larger tumors (p=0.047), lymph node (p=0.032) and distant metastases (0.019), higher histological grade (p=0.009), TN phenotype (p=0.027), BRCA1-negative expression. (p=0.006) and worse survival (p=0.011). Meanwhile, underexpression of hsa-miR-205ab was associated with larger tumors (p=0.027), lymph node (p=0.046) and distant metastases (p=0.014), BRCA1-negative expression (p=0.027), TN phenotype (p=0.038) and worse survival (p=0.024). While, hsa-miR-218a underexpression was associated with a larger tumor size (p=0.032), lymph node (p=0.011) and distant metastases (p=0.022), TN phenotype (p=0.019), negative expression of BRCA1 (p=0.039) and worse survival (p=0.003). Our results show that BRCA1 protein expression assessment, miR-7 and miR-10b overexpression and miR-205ab and miR-218b underexpression could be useful in evaluating BCs prognosis, especially for patients with triple negative tumors.

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PROSTHESIS EXPOSURE MANAGEMENT AFTER IMMEDIATE BREAST RECONSTRUCTION

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Introduction: Breast cancer is the most frequent malignant neoplasm among women. When diagnosed at an early stage, it has a good prognosis. With the biotechnological development of the prostheses and the advent of oncoplastics, the surgeries started to present a better cosmetic result, bringing with it psychological and functional benefits, without compromising the oncological character of the treatment. Breast reconstruction with the use of prostheses is far from achieving low complication rates, making studies of a great relevance that can help to define and improve the behavior in cases of complicating prosthesis surgeries. The objective of the study was to evaluate the flowchart adopted by a single team of breast surgery for guidance of therapeutic management in patients submitted to breast reconstruction who evolved with prosthesis exposure. **Methods:** Retrospective analysis of the database included reconstructed patients with use of definitive or temporary breast implants between 2014 and June 2016. The epidemiological characteristics of the population were evaluated; type of surgery and prosthesis mark; postoperative follow-up; and application of the conduit flow chart, which includes history of radiotherapy, presence of severe infection and extensive necrosis. **Results:** There were 56 complications (20.2%), 33 cases were exposed prostheses and had criteria for application of the conduit protocol, of which 14 had criteria for simple suture, with a success rate of 57.1%. At the final outcome, nine had loss of breast reconstruction and 24 remained with reconstructed breasts. **Conclusions:** The protocol for ducts for exposed prostheses, evaluated in this study, showed results with acceptable efficacy and good reproducibility, facilitating its application in future studies.

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AN TYROSINE KINASE RECEPTOR AS PROMISING THERAPEUTIC TARGET FOR TRIPLE NEGATIVE BREAST CANCER

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Objective: The aim of this study was to evaluate the expression of PDGFRA (platelet-derived growth factor receptor alpha) in 8 breast cancer tissue samples of which 2 TNBC (triple negative breast cancer), 3 luminal B and 3 luminal A. Clinical, and staging data were considered. **Methods:** The RNA was purified with the *RNeasy Mini Kit* (Qiagen), the cDNA was prepared by RT-PCR with the *QuantiTect Reverse Transcription* (Qiagen). The analysis was performed by qPCR (quantitative polymerase chain reaction) in the real-time PCR systems StepOnePlus™ (Applied Biosystems) with the GoTaq® qPCR Master Mix kit (Promega). ß-actin was used as the reference gene to normalize the expression of PDGFRA with specific primers. **Results:** In TNBC patients, show higher gene expression of PDGFRA 2.36 times more than luminal patients. In addition, the PDGFRA overexpression occur even after neoadjuvant chemotherapy. Is associated with. It has also been demonstrated that african ethnicity nd use of hormonal contraceptives may be related to the activation of PDGFRA. Both TNBC patients this study were recurrent in breast câncer. TNBC is an aggressive form of breast cancer that differs in epidemiology, risk factors, and prognosis from other types of breast cancer. The challenge in treating TNBC lies in the lack of targeted therapies currently available. Chemotherapy remains the only treatment option presently. Like many receptor tyrosine kinases (RTKs), PDGFRA is involved in the progression of a variety of cancers either by overexpression or by increased activity. **Conclusion:** These findings indicate that PDGFRA as a potential biomarker as well as a therapeutic target for TBNC.

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EVALUATION OF THE FALSE NEGATIVE RATE IN THE EXAMINATION OF FREEZING OF THE SENTINEL LYMPH NODE IN HBL – RECIFE (PE)

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Introduction: Breast cancer is the most commonly diagnosed cancer in women in the United States and accounts for 26% of all female cancers. In 2015, approximately 40,290 US women died from breast cancer. In our country, an estimated 59,700 new cases of invasive breast cancer. Then, is very important the early diagnosed of breast cancer and the use of sentinel lymph node probably chance this prognosis of this disease. **Objective:** To evaluate the false-negative rate of freezing of sentinel lymph node In breast cancer and the factors associated with it. **Methods:** Twenty-five breast cancer patients who underwent patent blue injection and sentinel lymph node (LS) biopsy between March 2016 and March 2017 in 570 surgery were evaluated for the following variables: age), tumor size, histological characteristics of the tumor (type- and degree of differentiation) and diagnosis of the definitive freezing and histopathological examination of LS. **Results:** The average age was 56,2, the tumor size was 2,3 cm and the histhological type was carcinoma ductal invasive in 80%. In a relation the degree of diferenciation, the G2 appear in 19 patients, G1 in 2 cases and G3 in 3 cases. The false-negative rate in the LS freezing test was 8% (2 cases). The specificity was 100%, and sensitivy was 50%. None of the variables evaluated was associated with increase in the incidence of false-negative. In our research, there was no association between tumor size and incidence of axillary metastasis. **Conclusion:** The false-negative rate of the LS freezing test was 8% and none of the variables evaluated correlated with this event. No anatamopathological variable studied was associated with the occurrence of false negative

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BREAST CANCER IN AN 18-YEAR-OLD PATIENT: A CASE REPORT

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Objective: The present report aims to describe a case of invasive ductal carcinoma in a young patient. **Methodology:** Active search in medical records. **Case:** B.S.M., female, 18 years old, arrived at the oncology service with diagnosed ductal infiltrative carcinoma, with a tumor measuring 6 x 8 cm, staging T4 Nx M1, with metastasis to lungs, and marker level CA 15-3 was 9,2, 4 months ago. The histopathology presented the carcinoma was moderately differentiated with intraductal component associated and the immunohistochemistry shows 95% for both estrogen and progesterone receptors, negative for HER-2 and level of 20% for Ki-67, both of them from 5 months ago. The thoracic CT from 4 months ago showed many non-calcified nodules sparse in pulmonary parenchyma up to 14 mm, compatible with implants, increased density in retroareolar region measuring 39 x 34 mm with slight thickening of adjacent skin, two nodules of 5 mm each and axilary limph nodes up to 11mm. At physical examination, the tumor was compromising 70% of the right breast, which was presenting nipple retraction and ulceration. Palliative chemotherapy was initiated with Fluoracil, Doxorubicin and Cyclophosphamide (FAC) once 4 months ago (11/21/17), that was switched to Doxorubicin, Cyclphosphamide and Paclitaxel (AC-T) for unavailability of Fluoracil at the Institution. The patient was submitted to 3 sessions of FAC 3 months ago (01/22/18). At 02/16/18, at physical examination right breast presented a tumor sized 7 x 6 with nipple ulceration, demonstrating fail of treatment, and then was administered the first cycle of Docexatel. At physical examination at 03/09/18, right breast presented a tumor of 5 x 5 cm with nipple injure on healing phase and the patient was conducted to the second cycle of Docexatel. Considerations: Breast cancer is considered rare before the age of 35, and the risk of having it grows rapidly with age, with its apex appearing between 40 and 60 years. The patient of the case for being 18 years of age demonstrates an exception to the age values in the statistical data. Thus, new studies are needed to understand the appearance of breast cancer in young patients.

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SYNTHETIC CHALCONES CYTOTOXIC ACTIVITY ON EHRLICH ASCITIC TUMOR CELLS (MURINE BREAST CANCER)

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Breast cancer is the world leading cause of women death. The chemotherapy has presented several side effects and many cases of chemo-resistence. Thus, research of new antineoplasic molecules with less aggressive effects is necessary. Chalcones have demonstrated extensive pharmacological potential including antineoplasic. **Objective:** The aim of this study was to evaluate *in vitro* cytotoxic effect induced for synthetic chalcones CLF and DMF on Ehrlich Ascitic Tumor (TAE) cells of murinho mammary carcinoma, by MTT (3-(4,5-dimethylthiazol-2- yl)-2,5-diphenyltetrazolium bromide) colorimetric assay as described by Mosman (1983). **Methodology:** The compounds CLF and DMF were solubilized in dimethilsulfoxide 1%. TAE cells were colected from Murine peritoneal cavity, washed with PBS and maintained in 5% CO2 for 24h at 37°C in humidified atmosphere. After, RPMI-1640 medium was supplemented with 10% FBS, 1% penicillin/streptomycin and 0.3% amphotericin. The 1.0×105 TAE cells were plated in 96-well tissue culture plates and treated with different concentrations of CLF and DMF (0.2, 2.0, 20, 50, 100 and 200 μM) for 48 h. After treatment, 10 μL of MTT (5 mg.mL–1) was added to each well, and the plates were incubated at 37°C for 3 h. The purple formazan crystals were dissolved in 50 μL of SDS (dodecyl sulfate sodium), and the absorbance was determined at 545 nm. The cell viability was calculated: viability (%) =_ (absorbance of the treated wells)/(absorbance of the control wells) ×100. The tests were performed in triplicates and IC50 (concentration (μM) that results in a 50% reduction in cellular viability) was obtained from sigmoidal dose-response curves (nonlinear regression) using the software GraphPad Prism 5.0 for Windows. **Results:** The chalconas CLF and DMF presented a statistically significant cytotoxic effect inducing cell death in a dose dependent manner. The chalcones inhibit TAE cells viability with an estimated IC50 of 22.30±5.10 μM and 46.30±6.10 μM, respectively at 48 h of treatment, by nonlinear regression curve. **Conclusions:** The chalconas exhibits significant cytotoxicity in 48h against TAE cells. The CLF was more potent than DMF, but both results showed important dose-dependent biological property of chalconas. Therefore, future studies will be necessary to identify the molecular mechanisms where compound operates.

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PROGNOSTIC EVALUATION OF PATIENTS WITH TRIPLE NEGATIVE IMMUNOPHENOTYPE, SUBMITTED TO NEOADJUVANT CHEMOTHERAPY

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Objectives: Evaluate the characteristics of patients with triple negative (TN) submitted to neoadjuvant chemotherapy attended at the Dr Arnaldo Vieira de Carvalho Cancer Institute (ICAVC) from 2006 to 2012. **Methods:** A longitudinal study was performed, descriptive type, retrospective, of patients with invasive breast carcinoma attended at ICAVC in Sao Paulo; data were analyzed on the data base of Microsoft Excel®. **Results:** Were evaluated 267 patients, among them, 24 (9%) presented TN breast neoplasm by the immunohistochemical study; 21% of them underwent neoadjuvant chemotherapy, having as main regimens the association of anthracycline and taxane; 4% presented pathological complete response (pCR) and 29% evolved with distant metastasis; being the disease free survival and mean global survival of 3 years calculed with Kaplan Meier. **Conclusion:** With this study, we observed 27% of triple negative tumors that, differently from the literature, presented the small complete pathological responde index of only 4%.

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IMPACT OF THE NEW STAGING TNM AJCC ON THE EVALUATION OF PATIENTS WITH BREAST CANCER

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Objectives: To evaluate the importance of the incorporation of the biological markers on the TNM 8th Edition to improve the staging of patients attended on the Dr Arnaldo Vieira Cancer Institute (ICAVC) from 2006 to 2012. **Methods:** A longitudinal study was performed, descriptive type, retrospective, of patients with breast carcinoma attended at ICAVC in Sao Paulo; data were analyzed on the data base of Microsoft Excel@. **Results:** Were evaluated 119 patients; of wich 58% presented changes related to staging accomplished in 2012, of these 52% presented changes with upstaging, 17.4% downstaging and 30.6% remained with the same clinical staging. **Conclusion:** With that study, we observed that most patients presented modification on the clinical staging, wich shows the importance of the incorporation of the biological markers to improve the related knowledge of the prognoses and treatment of breast cancer.

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BIOLOGICAL BEHAVIOR OF BREAST CARCINOMA *IN SITU* FROM JANUARY 2006 TO DECEMBER 2012

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Objectives: Evaluate the incidence of breast carcinoma *in situ* on patients attended at the Dr Arnaldo Vieira de Carvalho Cancer Institute from 2006 to 2012. **Methods:** A longitudinal study was performed, descriptive type, retrospective, of patients with breast carcinoma *in situ* attended at ICAVC in Sao Paulo; data were analyzed on the data base of Microsoft Excel®. **Results:** Were evaluated 267 patients attended at the mastology outpatient clinic, of wich 19 (7.1%) presented a diagnosis of breast carcinoma *in situ* by the core needle biopsy, being 13 (5%) histologically confirmed at the biopsy of the surgical part, of these 5% presented lobular breast carcinoma *in situ* (CLIS), two (10%) of the patients with carcinoma *in situ* presented recurrence, both with invasive component tumor, with hormone receptor positive status and HER-2 positive with high rates of KI67, one patient underwent mastectomy and adjuvant chemotherapy and the other one underwent chemotherapy only, since the first surgical approach was mastectomy; none of these patients presented distant-metastasis until now. **Conclusion:** With our study, it was observed that the incidence of breast carcinoma *in situ* at ICAVC was of 7.1%, being compatible with the prevalent incidence of current literature; in addition, it is understood that the presence of breast carcinoma *in situ* is a marker of risk for invasive carcinoma in relapse.

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PROGNOSTIC EVALUATION OF PATIENTS WITH LUMINAL B IMMUNOPHENOTYPE, SUBMITTED TO NEOADJUVANT CHEMOTHERAPY ATTENDED AT DR ARNALDO VIEIRA DE CARVALHO CANCER INSTITUTE FROM 2006 TO 2012

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Objectives: Evaluate the characteristics of the patients with Luminal B breast cancer submitted to neoadjuvant chemotherapy, attended at Dr Arnaldo Vieira de Carvalho Cancer Institute from 2006 to 2012. **Methods**: A longitudinal study was performed, descriptive type, retrospective, of patients with invasive breast carcinoma attended at ICAVC in Sao Paulo; data were analyzed on the data base of Microsoft Excel®. **Results:** Were evaluated 267 patients, in which 82 (31%) presented breast neoplasm with compatible immunohistochemistry with luminal B tumors, of these, 19 (7.1%) were submitted to neoadjuvant chemotherapy, 4 (21%) presented pathological complete response (pCR), both mammary and axillary, 1 (5.2%) patient presented distant metastasis for bone and none of them had local recurrence. The overall mean survival was 12 years and the disease-free survival was 4 years calculed with Kaplan Meier. **Conclusion:** The pCR was 21% in patients with luminal B tumors seen in our service, with high overall survival rates due to the possibility of adjuvancy with hormonal block, wich is consistent with the data present in the current literature regarding the prognosis of such patients.

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EVALUATION OF PATIENTS WITH INVASIVE BREAST CARCINOMA SUBMITTED TO NEOADJUVANT CHEMOTHERAPY ATTENDED AT DR ARNALDO VIEIRA DE CARVALHO CANCER INSTITUTE FORM 2006 TO 2012

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Objectives: Evaluate the characteristics of patients with invasive breast carcinoma submitted to neoadjuvant chemotherapy attended at Dr Arnaldo Vieira de Carvalho Cancer Institute form 2006 to 2012. **Methods:** A longitudinal study was performed, descriptive type, retrospective, of patients with invasive breast carcinoma attended at ICAVC in Sao Paulo; data were analyzed on the data base of Microsoft Excel@. **Results:** Were evaluated 267 patients, of wich, 48 (18%) underwent adjuvant chemotherapy with predominance of patients with tumors T3 (35.4%), DCI (91.6%) and luminal (54.1%); the main regimen used was anthracycline in association with taxane (45.8%); 14.5% patients presented complete clinical--pathological response (pCR); 74.5% underwent conservative surgery; 5.4% presented local recurrence and 23.6% presented distant metastasis in the mean period of 2 years (disease-free survival), the overall survival was 10 years. **Conclusion:** Neoadjuvant chemotherapy was shown in this study as a treatment of choice in locally advanced tumors targeting pCR with increased conservative breast surgeries.

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COMPARATIVE ANALYSIS OF THE USE OF FINE NEEDLE ASPIRATION IN THE DIFFERENTIAL DIAGNOSIS OF BREAST NODES IN THE STATE OF GOIÁS

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Objective: To analyze the result of fine needle aspiration (FNA) according to the most prevalent types of nodules in malignant cases, considering the color/race and the age bracket of the patients. **Methodology:** A cross - sectional study based on data collected in the Breast Cancer Information System (SISMAMA) - from Information Technology Department of the Brazilian Public Health Care System (DataSus) based on data from cytopathological breast exams realized by Fine Needle Aspiration (FNA) performed in the State of Goiás in the period from February 2012 to February 2014. The present study comprised the following age groups: 25–29; 30–34; 35–39; 40–44; 45–49; 50–54; 55–59; 60–64; 65–69; over 70 years old; in addiction to analyzing the prevalence of white, black and drab colors/races. Solid, cystic and solid-cystic nodules were studied. **Results**: In the analyzed period, 1052 exams were performed that detected breast nodules, of which 76.61% (n=806) were solid, 11.21% (n=118) cystic and 12.16% (n=128) solid –cystic. Of total exams, 615 (58.46%) were submitted to FNA and, through the results, the solid nodule presented the highest percentage of malignancy (5.85%; n=36). In the analysis of the patients diagnosed with this type of alteration, there was a predominance of drab color, totaling 230 cases (21.86%). Taking into consideration their age group, it was observed that women between 40 and 49 years old were associated with a higher percentage of breast nodules (27.33%), confirming statistical significance ($p<0.05$). **Conclusion**: The results of this study demonstrate that several women (n=1052) in the state of Goiás were diagnosed with breast lumps according to the analyzed period, and more than half of this population (58.46%) was submitted to the FNA. By assessing the types of nodules and those who most frequently show positivity for malignant processes, it was noticed that the solids correspond to this category, being that such alteration guided the present study for comparisons assessed later. The prevalence in terms of age range occurred in the fourth decade, confirming Brazilian society of Mastology statistics by saying that breast cancer occurs mainly after the age of 40. With regard to the color/race, drab patients exhibit higher percentage of solid breast lumps.

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RUTHENIUM (II)/AMINO ACID/DIPHOSPHINE COMPLEXES AS APOPTOSIS INDUCERS IN BREAST CANCER CELLS AND THEIR TOXIC EFFECTS IN ANIMAL MODELS

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Cytotoxicity and mechanism of action of ruthenium(II)/amino acids/diphosphine complexes were evaluated against breast cancer (MDA-MB-231 cells), as well as their toxic effects in animal models. The cell death type induced in MDA-MB-231 cells by compounds was evaluated measuring Annexin V-positive number, the activated caspases levels, and by morphological features. In order to clarify which mechanisms are responsible for led breast cancer cells to death, we evaluated whether these compounds can cause DNA damage, changes in cell cycle kinetic, mitochondrial dysfunction, and ultrastructural alterations in MDA-MB-231 cells. As toxicity assessment is a required step for preclinical study of novel metal based compounds, the acute oral toxicity was evaluated, and the genetic toxicity was determined by Micronucleus (MN) and Comet assay protocols on Swiss mice treated with these complexes. Zebrafish model was used to evaluate toxicity of Ru(II)/amino acids complexes during embryonic and larval development, more specifically, the mortality and hatching rates of zebrafish were determined. Ru(II)/amino acids complexes induced apoptosis in MDA-MB-231 cells by increase in number of Annexin V-positive cells, morphological changes, loss of mitochondrial membrane potential, and caspases-3 and 7 activation. Although these compounds have a weak interaction to DNA molecule, it was observed DNA damage, probably due to reactive oxygen species production related to mitochondrial membrane depolarization. As can be seen by ultrastructural analysis, these complexes can reduce mitochondrial amount in MDA-MB-231 cells. Thus, Ru(II)/amino acids complexes are more active for tumor cells, and their mechanism of action are related to induction cell cycle block, DNA damage, and mitochondrial dysfunction, lead to apoptosis involving p53, PARP cleavage and caspases activation. In addition, these compounds were very well tolerated orally, and it was observed lack of micronuclei formation in bone marrow cells and low DNA damage in peripherical blood cells from Swiss mice. As regard to toxicity on zebrafish embryo development, the compounds caused low embryotoxicity, being mainly observed hatching delay and mortality at high concentrations. Altogether our findings suggest that ruthenium (II)/amino acids/diphosphine complexes induce cellular and molecular responses in breast cancer cells leading to mitochondria-mediated apoptosis, and they are not harmful, presenting low systemic toxic effects.

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A RARE CASE OF METASTATIC MELANOMA IN THE BREAST

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Objective: To report a case of metastatic melanoma in the breast. **Case:** woman, 66 years, complaining of mass in the left breast. She reported treatment of melanoma in the gluteal region in 2011 and left breast cancer in 2016 (luminal B (RH+, HER2-), undergoing mastectomy with sentinel lymph node biopsy, chemotherapy and hormone therapy). Physical examination: breast implants; regular, mobile mass, 10h of left breast, measuring about 2.0 cm. Ultrasonography showed a solid-cystic mass, predominantly solid, with a hypoechogenic content, with its largest axis parallel to the skin, with slightly lobed contours and well-defined limits, with an apparent increase in the surrounding echogenicity, at 10 hours of the left breast, measuring 1.9 x 1.7 x 0.9 cm, suggestive of complex cyst, BI-RADS 4. Mammography: mass partially visualized in the medial quadrants of the left breast, visible, only visible in the craniocaudal view. The hypothesis was that of recurrence of breast cancer. Patient underwent extensive excision of the lesion to obtain surgical margins of neoplasia. Histopathological findings, associated with immunohistochemistry (AE1/AE3: negative. S-100 protein, melan A and Hmb-45: positive), were compatible with the diagnosis of metastatic melanoma for the breast. Subsequently, a recurrence of melanoma in the gluteus was diagnosed. Chest CT demonstrated multiple lung lesions. Patient is being treated for melanoma, and using letrozole. **Conclusion**: metastatic melanoma for the breast is uncommon. The breast surgeon should be aware of this possibility, especially in women with a history of melanoma. In addition, there is a need to work together with the pathologist, making diagnosis and treatment as soon as possible.

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EPIDEMIOLOGICAL ANALYSIS OF GRANULOMATOUS MASTITIS AT THE MASTOLOGY SERVICE AT HOSPITAL MATERNO INFANTIL DE GOIÂNIA

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Objectives: The present study aims to evaluate the patient's profile, along with ways of diagnosing granulomatous mastitis (GM) disease, duration of treatment, remission and relapse time. **Methodology**: A retrospective analysis of physical records of patients treated between January 2010 and October 2017, at Hospital Materno Infantil de Goiânia. Results: During this time, ten women were diagnosed and treated for GM. All women underwent clinical breast examination to identify palpable tumors. Ultrasonography was the initial imaging method used for the evaluation, however mammography was performed in three cases due to the screening age range for breast cancer. The definitive diagnosis was obtained by core biopsy or surgical excision, with histopathological result confirming GM. The median age was 36.1 years. As for the use of oral contraceptive, the mean time of use was 5.5 years, and only one patient did not report the use of it. Only one patient was nulliparous, the others had been pregnant at least once, with an average time of breastfeeding of 1.5 years and all had interrupted it for more than two years. Two patients had diabetes mellitus, one of whom was diagnosed during the investigation of the GM. The most common symptoms were pain (90%), breast masses (80%) and association with abscess (60%). Three patients used antibiotics because of the association of abscess infections with the inflammatory process of mastitis. Nine patients have used corticosteroids to treat the disease since diagnosis. The only patient with abscess drainage, quadrantectomy and antibiotic therapy was also the only one that present with local recurrence two months after treatment, and remission was achieved after using corticotherapy. Regarding treatment with corticosteroids, dose reduction was done according to clinical response. The mean time of treatment was 3.1 months [1-7 months], and mean follow-up time of the patients was 24.8 months [9-96 months]. Conclusion: The study presents the same epidemiology, follow-up time and treatment response in accordance with international literature. Implementing a flow chart of care, diagnosis, therapy and follow-up of GM improves the quality and assertiveness of early treatment, avoiding misuse of antibiotics.

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PATTERNS OF POST-OPERATIVE IRRADIATION IN BREAST CANCER PATIENTS SUBMITTED TO NEOADJUVANT CHEMOTHERAPY

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Introduction: The neoadjuvant chemotherapy (NAC) approach can expressively influence radiation therapy indications after breast surgery by theoretically altering the loco-regional relapse risk in accordance with clinical stage features. Precisely, it could reduce this risk for a subgroup of patients with locally advanced breast cancer who achieved a good pathologic response after NAC. Thus, this might raise clinical questions of whether these more favorable subset of patients do benefit from PORT therapy or whether radiation should be performed only for patients with gross residual tumor after neoadjuvant chemotherapy. In addition, there are many uncertainties about the most appropriate radiation therapy fields in patients who received NAC given that all recommendations are usually based on initial clinical and pathological aspects. **Objectives:** The aim of the current study was to assess the radiation therapy fields and survival outcomes in breast cancer patients who underwent (NAC) followed by surgery. **Methods:** We performed a retrospective analysis of all non-metastatic breast cancer patients treated between 2008 and 2014 at our institution, who received NAC and post-operative radiation therapy (PORT). **Results:** A total of 528 women were included of whom 396 were submitted to mastectomy or adenomastectomy. Most (92.8%) of the patients had locally advanced disease (clinical stage IIB to IIIC). All patients underwent irradiation for breast or chest wall. Most patients received radiation therapy of the supraclavicular and axillary (levels II and III) nodes (87.1 and 86.4% for breast-conserving surgery and 95.1 and 93.8% for mastectomy / adenomastectomy, respectively). Irradiation of level I axillary and internal mammary nodes was uncommon. The most common radiation therapy schedule was the conventional dose of 50Gy to 50.4Gy in 25 to 28 fractions. The mean overall survival was 66.6 months and the mean disease-free survival was 54.6 months. **Conclusions:** After NAC, most patients received irradiation of the breast/chest wall and axillary and supraclavicular nodes. Indications were based on initial disease presentation associated with relapse risk factors. In this setting, post-operative radiation therapy to breast/chest wall with or without regional nodal irradiation was effective management that is associated with acceptable survival rates.

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DOES THE ADDITION OF THE NEW PROGNOSTIC BIOMARKERS ON EIGHTH EDITION OF AJCC CHANGE BREAST CARCINOMAS STAGING?

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Tumor staging plays a pivotal role in the treatment against cancer. The new revision of AJCC included histologic grade, estrogen receptor (ER), progesterone receptor (PgR), HER2 and Ki-67 expression as prognostic biomarkers for breast cancer (BC) staging. This study aimed to evaluate if the new prognostic biomarkers included on the eighth edition of AJCC are sufficient to change BC staging. Clinicopathological and immunohistochemical characteristics of 92 BCs, 36 triple-negative (TNBC) and 56 non-triple-negative (NTNBC) breast tumors, were collected from medical records of the Pathology Department of Araújo Jorge Hospital-ACCG (Goiânia, Goiás, Brazil). The study was approved by the institutional Ethics Committee of Araújo Jorge Hospital (Report nº 948.930, 2015). BCs were evaluated under the recommendations of the seventh edition of AJCC and then compared to new (eighth) edition criteria. Results show that 2.8% of TNBC progressed from stages I-II to III-IV (p=0.81) and 5.4% of NTNBC regressed from stages III-IV to I-II (p=0.57), revealing that the addition of new prognostic biomarkers abovementioned had no influence on BC staging. It is well known that, compared with other tumor types, TNBCs have high expression of cyclin E, caveolins 1 and 2, P-cadherin; low expression of E-cadherin and cyclin D1. TNBCs also present aberrant expression levels for p53, BRCA1 and PARP. These biomarkers can be important on BC stanging and the lack of a more comprehensive assessment of possible BC prognostic biomarkers can be a weakness of new AJCC version.

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LATISSIMUS DORSI MUSCULOCUTANEOUS FLAP RECOSNTRUCTION AFTER NIPPLE SPARING MASTECTOMY COMPLICATION: CASE REPORT

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Introduction: The latissimus dorsi (LD) myocutaneous flap has been an option for partial and total breast reconstruction. The LD muscle is supplied by thoracodorsal artery and vein. These substantial vessels branches into a network of smaller tributaries, which provide a rich blood supply both for the muscle itself and for the overlying skin. Reconstruction with the LD flap is now considered to be the primary procedure of choice for many patients for reasons of robustness and low rates of complications. The indications for autologous reconstruction are variable and include women that do not want prosthetic reconstruction, have had a prior failed prosthetic reconstruction or have had prior radiation to the breast or chest wall. **Case:** A 45-year-old female patient with multicentric breast carcinoma underwent nipple sparing mastectomy on the right breast with prosthesis reconstruction. The patient progressed with lower quadrants skin necrosis of the right breast. Patient had no local or systemic signs of infection and no exposure of the prosthesis. Four weeks later the first surgery, a LD myocutaneous flap was performed after necrosed area debridement with nipple preservation and rescue of the first surgery prosthesis. The prosthesis was covered by the preserved major pectoral muscle and the LD flap. Patient evolved well without complications. **Conclusion:** The use of musculocutaneous flaps in breast reconstructive surgery has a wide variety of applications. The LD flap is robust and reliable with a failure rate of less than 1%. It can be safely utilized even in "high-risk" cases such as heavy smokers and obese patients. It is an especially useful technique for treatment of implant breast reconstruction complications.

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QUALITY OF LIFE IN PATIENTS WITH LYMPHEDEMA SUBMITTED TO SURGICAL TREATMENT FOR BREAST CÂNCER ATTENDED AT THE PHYSIOTHERAPY AMBULATORY OF A REFERENCE HOSPITAL OF THE FEDERAL DISTRICT

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Introduction: Lymphedema, secondary to surgical treatment of breast cancer, can result in functional, social and emotional complications that limit the patient's ability to lead a normal life. The impact on the patient's life can be measured through the application of questionnaires that evaluate the quality of life. **Objective:** to evaluate the quality of life in patients with lymphedema secondary to the surgical treatment of breast cancer and how much this is related to the functional limitations caused by this complication. **Method:** descriptive cross-sectional study in patients with lymphedema secondary to surgical treatment for breast cancer, attended at the physiotherapy ambulatory of a reference hospital of the Federal District, from November 2017 to January 2018. DASH instruments were used to evaluate the functionality and EORTC QLQ-C30/BR23 for quality of life assessment. Results: Fifty-one women, with a mean age of 54 years, were included and 76.5% of them presented some type of pain. The mean total functional score was 44.37±20.08. The functional quality of life scales with the best and worst result were social functioning and sexual functioning, respectively. The scales of symptoms with the worst outcomes were insomnia, financial distress, pain and symptoms in the arm. The relationship between the existence of symptoms and low functionality was identified. **Conclusion:** Symptoms caused by lymphedema secondary to the treatment of breast cancer significantly affect quality of life and functional capacity, including physical, social and emotional aspects.

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PREVALENCE OF BREAST ABNORMALITIES FOUND IN ULTRASSOUND

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Introduction: Breast disorders are very frequent in the female population, and can be divided into benign and malignant ones. For its evaluation, ultrasonography (USG) provides important information on breast findings, providing additional data to the other diagnostic methods. Within this, the Breast Imaging Reporting and Data System (BI-RADS) classification universalizes the diagnosis and assists in the standardization of an examination that is a dependent operator. **Objectives:** Quantify the prevalence of normal findings in breast USG, establish the most frequent pathological findings in breast USG and establish the frequency of BI-RADS findings. **Methodology:** This is a cross-sectional retrospective descriptive study, carried out with 209 breast ultrasonography reports from the Center for Fetal Medicine and Human Reproduction of Goiânia - Fértile Diagnósticos, carried out in 2016 and 2017. **Results:** Considering the whole sample, 209 mammary USG reports, of which 143 had unchanged results (68.42%), with 80% of reports classified as BI-RADS 1 (absence of abnormal findings). The second BI-RADS most found was classified as 2, in which was found 10,5% of benign abnormalities. Already 31.5% of the reports presented sonographic alterations, with the main abnormality observed being the benign functional alterations, present in 56% of them. Then, the cystic nodes occupied the position of the second most frequent abnormality (36.6%). It also was analyzed 16 reports of solid nodules (24.4%). **Conclusion:** In this way, the prevalence of normal USG was 68%, whereas among the altered reports, benign functional alterations were the most frequent followed by solid nodules. Regarding BI-RADS, types 1 and 2 were the most found, according to Brazilian literature.

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MALIGNANT PHYLLODES TUMOR OF THE BREAST: REPORT OF TWO CASES AND A RARE ASSOCIATION

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Introduction: Phyllodes tumors (PT) represent less than 1% of all breast tumors. Most of them are benign, but up to 30% show malignant stroma. Malignant PT of the breast (MPTB) are characterized by marked stromal cellularity, atypia and high mitotic rate (> ou = a 10 per 10 high-power fields). Unlike benign PT, MPTB can be clinically aggressive, with local recurrence rates ranging from 23–30%. Malignant change of the epithelium in MPTB is rare. The most frequent occurrence is infiltrating carcinoma of various types while ductal carcinoma *in situ* (DCIS) is more rare. The purpose of this study was to present two cases of MPTB, one of them with a concomitant DCIS. **Case reports:** Case 1: A 49-year-old female patient presented a history of mass in the right breast with accelerated growth. Core biopsy was compatible with a fusocellular neoplasm. Patient underwent simple mastectomy with surgical margins free. Macroscopy evidenced a 12x11 cm lesion. Immunohistochemistry (IHC) showed a tumor with high mitotic rate (12 mitoses/hpf), ki-67 10%, CD-34 and vimentin +, S-100 protein and AE1/AE3 ceratines -, compatible with malignant phyllodes tumor. Case 2: A 54-year-old female patient presented with a firm mass in the left breast with accelerated growth. Core biopsy was compatible with a low grade MPTB (6 mitoses/hpf). IHC was positive for CD-3 and vimentin and ki-6715%. Patient underwent left adenomastectomy with sentinel node biopsy. The features were consistent with MPTB of 4.5x3.0cm. The epitelial component showed a 0.7x0.6cm DCIS, nuclear grade 2, solid with hormonal-receptors positives (>90%). Surgical margins were free of tumor. **Discussion:** PT represent a specific subset of breast soft tissue tumors composed of a connective stroma and epithelial elements. These epithelial components may show a range of metaplastic (apocrine, squamous) and proliferative changes. However, DCIS in association with PT is extremely rare, with only few cases reported in the literature. The role of adjuvant radiation or chemotherapy following partial breast surgery (PBS) or mastectomy is still unclear due to the rarity of these tumors. **Conclusion:** In this study, we described a MPTB that harbored an intraductal carcinoma. This result could determine an absolute indication for adjuvant radiotherapy if the patient underwent PBS. Although the stroma in these tumors is commonly the aggressive component, the epithelial component also requires close and careful histological appraisal.

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PATHOLOGICAL FEATURES AND GENETIC TESTING AMONG BREAST CANCER YOUNG WOMEN: A SINGLE-INSTITUTION EXPERIENCE

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Objectives: To describe the anatomopathological characteristics and the access to genetic testing among breast cancer young women attended at a private institution in Goiás-Brazil. Methodology: In this descriptive and retrospective study, were reviewed medical records of breast cancer young women (< or = 40 years at the diagnosis) attended at a private cancer institution from March 2016 to March 2018. Data with respect to age at diagnosis, histopathological and immunohistochemical aspects and access to genetic testing were examined. Results: A total of 67 women were identified. The median age at the diagnosis was 36 years (range 26–40 years). The most common histological type was invasive ductal carcinoma (98.5%); 45% (n=30) and 41% (n=28) were grade 3 and 2 tumours respectively. 70% (n=47) were estrogen receptor (ER) positive (at least 1% of positivity). 20,8% (n=14) were triple-negative and 2 women had ER positivity between 1–10%. 26% (n=18) were human epidermal growth factor receptor -2 (HER-2) positive (HER-2 3+ or amplified FISH/ISH). The ki-67 index was >14% in 51 women (76%). Overall, 39% (n=26) got a genetic testing. The mean age of tested patients was 33,8 years. Among the women with available genetic results so far (n=19), six were identified (31%) with pathogenic mutations (BRCA-1= 4; BRCA2+MUTYH=1; SKT11=1). Three of BRCA-1 mutated were triple-negative and the fourth had low hormonal receptor positivity (1%). Conclusion: In this real-world and single-institution study, the proportion of triple negative and HER2 positive women was discretely higher than that described for older breast cancer patients. As expected, the majority of women had high grade tumours. A hereditary predisposition is more common amongst young women and may impact decisions on local and systemic disease management. Only the minority of this clinically high-risk group got a genetic testing. In this brief analysis, it was observed that almost one in four tested women harbored a pathogenic genetic mutation. Despite of the efforts to reduce the cancer care disparities, including the access to genetic counseling, significant barriers persist even among patients in private health assistance.
Keywords: Breast cancer in young women; genetic testing; BRCA mutation.

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MOLECULAR ANALYSIS OF TRANSLOCATIONS ASSOCIATED WITH EWING'S SARCOMA IN THE DIFFERENTIAL DIAGNOSIS OF UNDIFFERENTIATED AND UNCLASSIFIED SARCOMAS

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Undifferentiated and unclassified sarcomas constitute a heterogeneous group of sarcomas, including the Ewing sarcoma family of tumors (ESFT). However, some tumors with Ewing sarcoma (ES) morphology remain with undifferentiated histogenesis due to negative or non-informative molecular results. A case of 25-year-old female patient with a massive lesion occupying almost all of the mammary parenchyma on the right, with a hardened appearance and measuring 18.0cm was described. Chest tomography and resonance showed extension of the lesion to the chest wall, with no apparent bone involvement. A histology of the material from core biopsy revealed high grade fusocellular neoplasia with areas of necrosis, atypia and mitosis; and absence of epithelial component represented in the sample. An immunohistochemistry of the lesion revealed negative expression of smooth muscle actin, HHF35, desmin, S100, CD34 and EMA. Positive expression of CD99, CD56 and CD57 markers was also observed. The patient underwent radical surgery and adjuvant treatment with chemotherapy and radiotherapy. In view of the immunohistochemically profile and rosette arrangement in a fusocellular lesion, a molecular evaluation of translocations associated with ES was performed. However, there were no translocations commonly associated with this pathology [t(11; 22) (q24; q12)]. The present report may contribute to a diagnostic investigation of similar cases and to the pre-test orientation of molecular evaluation.

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EPIDEMIOLOGIC ANALYSIS OF MAMMOGRAPHY IN WOMEN WITH LESS THAN 45 YEARS OF AGE IN GOIÁS BETWEEN 2010–2013

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Objective: Quantify and analyze mammography made in women with less than 45 years of age in Goiás between 2010–2013. **Methodology:** This is a descriptive study using data from the Sistema de Informações do Câncer de Mama (SISMAMA), which has the objective to evaluate and quantify the mammography in women up to the age of 45, as well as its indication, diagnosis and trace results, and distribute these tests within Goiás. **Results:** In the period of 2010 to 2013 were realized, in the state of Goiás, 53763 mammograms in women under the age of 45 years, which 52134 (96.9%) as screening test and 1629 (3.1%) as diagnostic exam. Among of 53763 exams, 32270 (60.025%) were executed in Goiânia and 21493 (39.985%) in the country towns in the state. From the totality, 39 (0,007%) were performed in girls under 10 years old, 21 (0.04%) in women in the age range of 11 to 14 years, 104 (0,2%) between 15 to 19 years, 233 (0.43%) between 20 to 24 years, 572 (1.06%) in women between 25 to 29 years, 1764 (3.28%) between 30 to 34 years, 9801 (18.23%) between 35 to 39 years and 41229 (76.069%) mammograms were performed in women in the age range of 40 to 44 years. As to BI-RADS (Breast Imaging Reporting and Data System) classification, 6716 as BI-RADS 0, 33799 as BI-RADS 1, 11433 as BI-RADS 2, 1207 as BI-RADS 3, 522 as BI-RADS 4, 65 as BI-RADS 5 and 25 as BI-RADS 6. **Conclusion:** Most of the women under the age of 45 did screening tests (96.9%), therefore, were asymptomatic, and most of them were between the ages of 40–44 years. Among the exams, 62.86% were classified as BI-RADS 1, indicating negative detection, 12,49% were BI-RADS 0, meaning additional imaging is needed, 21.26% were BI-RADS 2, indicating benign finding, 2.24% were BI-RADS 3, showing a probable benign finding, usually followed by a 6-month follow-up mammography, 0,97% were BI-RADS 4, indicating a suspicious abnormality in which a biopsy is considered, 0.12% were BI-RADS 5, being highly suggestive of malignancy and typically evaluated with biopsy, and 0.05% were classified as BI-RADS 6, showing known cancer in which appropriate action should be taken. This results indicates that most of the women under the age of 45 at the state of Goiás do not show malignant or benign signs of breast cancer. However, the early detection of any sign of breast cancer is crucial for its treatment, which brings the discussion if the early screening (under 45 years old) actually changes the overall prognosis of this disease.

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PREVALENCE OF TYPES OF BENIGN BREAST LESIONS, BY AGE GROUP, IN GOIÁS

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Objective: To carry out a study of the prevalence of benign breast lesions, by age group, in Goiás, establishing the types that most affect certain ages. **Methodology:** This is a descriptive study of DATASUS data regarding histopathological examination of the breast in the years 2010 to 2013, in Goiás. **Results:** Fibroadenoma with 652 cases is the most prevalent benign lesion, with the highest age group of 15-19 years, with a small decrease of 20–24 years, remaining stable until the age of 49 and regressing thereafter. There was a decrease from 2011, with 197 cases, to 111 cases in 2013. Fibrous condyloma with 235 cases, with an age group with major involvement between 45-54 years (37.44%), is stable between 30-44 years and increase to 45 years with a subsequent decrease after 54 years. There is stability between the number of cases in 2010 (61 cases) and 2011 (68 cases), leading to a small decrease until 2013, with 43 cases. Adenosis WOS (without other specifications) type lesions, with 75 cases, were more prevalent in the 40-54 age group (52%), with small involvement among the young, observing an increase in adult cases and regression in the elderly. There is a decrease in cases between 2010 (27 cases) and 2011 (15 cases), remaining stable until 2013 (15 cases). The ductal hyperplastic lesion without atypia, with 62 cases reported, showed a stability in the number of cases between 30–49 years, with increase between 50-54 years (14 cases) and subsequent decrease between 55–69 years. There is a considerable decrease between 2010 and 2011 (from 23 to 13 cases), with a stabilization until 2013, where 11 cases were reported. **Conclusion:** It is possible to note that the cases that were most reported in Goiás between 2010 and 2013 were, in order of higher prevalence, fibroadenoma, fibrous condyloma, adenosis WOS and ductal hyperplastic lesion without atypia. The most prevalent age group in the observed cases was 40-54 years, except in fibroadenoma, the highest prevalence in adolescents (15-19 years). In the period between 2010 and 2011, there was an increase in cases of fibrous condyloma and a decrease in the cases of adenosis WOS and ductal hyperplastic lesion, in the same period. As of 2011, there was a decrease in cases of fibroadenoma. In 2013 there was a reduction in cases of fibrous condyloma. The number of cases of adenosis WOS and ductal hyperplastic lesion without atypia remained stable in the same period.

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IMPACT OF TAMS IN TUMOUR MICROENVIRONMENT AS PROGNOSTIC MARKERS IN BREAST CANCER

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The objective of this study was to relate the presence of tumor-associated macrophages (TAMs) from 82 breast cancer cases with clinico-pathological characteristics of breast cancer cases and to assess the impact of TAMs on the tumor as a possible prognostic marker. The selection of the cases was made from the search of anatomopathological records in a reference center for the treatment of cancer. We included confirmed cases of diagnosis of invasive ductal breast cancer, with clinical follow-up for five years. The laminas were subjected to immunihistochemical analysis with monoclonal antibody TAMs (CD68). In the statistical analyzes, the cases were classified according to the semi-quantitative evaluation of cell marking as low infiltration or high infiltration and according to the mean. Elevated levels of TAMs (CD68+) were significantly correlated with patient age, presence of distant metastasis, more advanced tumor staging, absence of estrogen receptors (ER) and progesterone (PR), and triple negative breast cancer (TNBC). The survival of the cases of breast cancer with larger TAM infiltrate was reduced corroborating with the other results found. The number of CD68 positive cells represented a strong independent prognostic factor. The presence of TAMs in this study served as an indicator of a worse prognosis among women with the TN phenotype. The high infiltration of TAMs significantly impacted prognostic factors relevant to cases of women with breast cancer.

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M2-TYPE MACROPHAGES IN TUMOUR MICROENVIRONMENT AS PROGNOSTIC MARKERS IN WOMEN WITH BREAST CANCER

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The objective of this study was to assess the prognostic value of tumour-associated macrophages (TAMs) with a possible M2-type macrophage phenotype (CD163+) in women with breast cancer. Cases selected among the records of anatomo-pathological examinations carried out at a reference center for cancer treatment. Inclusion of confirmed cases of invasive ductal carcinoma with clinical follow-up for 5 years. The laminas were subjected to immunihistochemical analysis with monoclonal antibody TAMs like M2-type (CD163). For the statistical analyses, the cases were classified according to the mean value of cell tagging as low infiltration or high infiltration. High levels of TAMs (CD163+) were significantly correlated with distant metastases, lack of receptors estrogen (ER) or progesterone receptors (PR) and triple-negative breast cancer (TNBC). A high number of CD163+ cells was a strong independent prognostic factor. High infiltration of CD163+ emerged as a strong independent prognostic factor. Additional markers able to identify patients with more aggressive types of breast cancer may help predict a poorer prognosis.

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IN VIVO IMAGING USING BIOLUMINESCENCE FOR EVALUATION OF ANTITUMORAL EFFICACY IN A BREAST CANCER MODEL

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Objective: To evaluate the Antitumor activity of a liposomal nanosystem containing Paclitaxel and Doxorrubicina (pHSL-PTX/DXR), by monitoring the tumor cells bioluminescence *in vivo*. **Methodology:** The tumor cell line 4T1 (adenocarcinoma mammary murine – ATCC CRL-2539) was modified using lentivirus particles Lentifect™ (GeneCopoeia, MD, EUA), according to the manufacturer's protocol. The cells were cultivated in DMEM medium, with fetal bovine serum and antibiotics, 10% and 1%, respectively. The orthotropic implants of 4T1-luc (1 x 10^5) was performed in the left fifth breast of female Balb/c mouse. Throughout the procedure, the animals were kept under inhalation anesthesia with isoflurane (2.5%). The treatment strted after 14 days of tumor induction, in the following groups: *pHSL-PTX/DXR, pHSL--DXR; pHSL-PTX, free DXR, free PTX e free PTX/ free DXR*. The intravenous treatments were performed in 4 doses of 100 µl, three days interval. For the bioluminescence images, 100 µL of D-Luciferin (concentration 150 $mg.kg^{-1}$) (Sigma) was used. The animals were kept under anesthesia in the Lumina XR IVIS equipment, with 1 minute exposure time. The quantification of the photon signal was processed in the Living Image 3.0 program, Caliper Life Sciances, Alameda, CA. **Results:** The *pHSL- PTX / DXR* treated group system showed the smallest sign of bioluminescence during and after treatment, showing a reduction in tumor mass, and consequently better efficacy against primary breast tumor. There was also a reduction of the light signal in the lung region, indicating a decrease in the metastasis process caused by this type of tumor cell. **Conclusion:** using the *in vivo* bioluminescence method it was possible to evaluate the antitumor efficacy of the liposomal nanosystem *pHSL-PTX/DXR*, and the non-invasive monitoring of pulmonary metastases.

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PAIN IN WOMEN WITH BREAST CANCER

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Objective: To describe the prevalence of pain in women with breast cancer. **Methodology**: The search for scientific articles was carried out in the databases: PubMed, LILACS and SciELO. Articles published between 2000 and 2018 were selected in English, Portuguese or Spanish. The searches in the databases were performed with the following combinations: (*"Pain"*[*MeSH Terms*] *OR "Chronic Pain"*[*MeSH Terms*] *AND "Breast Neoplasms"*[*MeSH Terms*] *OR "Prevalence"* [*MeSH Terms*]). **Results**: Painful perception in breast cancer patients is multifactorial and presents different prevalence rates. Persistent pain in the breast (duration ≥ 6 months) was reported by 46.5% of breast cancer survivors and 12.7% of women without a history of breast cancer. In Denmark, it was observed that the prevalence of chronic pain after breast cancer treatment ranged from 22% to 53%. In patients submitted to mastectomy, the prevalence of chronic pain may vary between 20 and 68%. Among the justifications for the variation in the prevalence rates of pain in women with breast cancer, the different criteria of pain measurement and the heterogeneity of this population stand out. The occurrence of preoperative breast pain was 27.1%. In the postoperative period, there is also a high prevalence of breast pain. In a prospective study involving 398 women with breast cancer, it was observed that approximately 25% of the sample had significant and persistent levels of breast pain in the first six months after surgery. In another similar study, breast pain after six months of surgery was described by 52.9% of the patients. In another study, three months after surgery, 60 patients (40%) reported persistent pain in the breast, for which 62% used analgesics. It should be noted that this painful perception is usually of musculoskeletal origin and may suffer variations due to the surgical technique used and the length of each procedure. In a study comparing quality of life after axillary lymphadenectomies and sentinel lymph node biopsies in breast cancer patients, ipsilateral shoulder and upper limb pain was observed in 68% and 36% of patients, respectively. **Conclusion**: Breast cancer represents a public health problem, with a high incidence of pain related to the disease or the treatment performed. Strategies to imp rove persistent breast pain should be explored for incorporation into the standard treatment of breast cancer survivors.

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IS THERE AGREEMENT BETWEEN EVALUATORS THAT USED TWO SCORING SYSTEMS TO MEASURE ACUTE RADIATION DERMATITIS?

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Objective: To analyze the correlation between the Radiation Therapy Oncology Group (RTOG) and WHO (World Health Organization) scales and the agreement between evaluators. **Methodology:** A prospective and longitudinal study conducted during the period of 2016-2017, in a university hospital, including 834 images of irradiated sites of breast cancer (BC) women during radiotherapy (RT). The images were evaluated by three experienced nurses. In order to evaluate the correlation between the RTOG and WHO scales and the agreement between the evaluators, the Spearman correlation *rho* coefficient (ρ) and the *Kripp* alpha ordinal agreement coefficient were used, respectively. The statistical software's used were SPSS version 20.0 and R version 3.2.5. **Results:** Moderate to strong correlations were identified between the two scales (correlation coefficients 0.4 - 0.9). When analyzing the agreement among the evaluators, moderate agreements (RTOG scale: 0.409, 95%CI 0.369–0.438; WHO scale: 0.550, 95%CI 0.509–0.593) were identified and general agreement rates of 10.2% and 28.8%, respectively, were obtained. **Conclusions:** The RTOG and WHO scales should be used with caution in the clinical practice to identify radiodermatitis prevalence and severity. An illustrative scale containing typical cases of radiodermatitis is being designed by our group aiming to improve accuracy and agreement between evaluators that will be tested in subsequent clinical studies.

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PHYSICAL ACTIVITY AND HEALTH RELATED QUALITY OF LIFE OF BREAST CANCER WOMEN SUBMITTED TO NEOADJUVANT CHEMOTHERAPY

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Objective: To evaluate the influence of the level of Physical Activity (PA) in the Health Related Quality of Life (HRQOL) of women submitted to neoadjuvant chemotherapy for the treatment of breast cancer (BC). **Methods:** Prospective cohort study in women diagnosed with BC, with neoadjuvant chemotherapy with adriamycin and cyclophosphamide (AC), from April 4, 2016 to August 2, 2017, at Hospital do Cancer III (HCIII / INCA). The patients were submitted to the interview, physical examination and application of questionnaires at the first consultation with the oncologist and after 21 days of the end of the 4th cycle of neoadjuvant chemotherapy with AC. This project was submitted and approved by the Research Ethics Committee (CAAE 51100615.7.0000.5274). The analysis of the population and the simple and adjusted linear regression analysis between the levels of PA and the domains of HRQoL were performed, considering the 95% confidence interval. **Results:** A total of 253 women were included, with a mean age of 50.87 years (± SD 10.62). After adjusting, the women with higher levels of PA have a better overall QoL (Beta 4.06, p=0.040) after neoadjuvant chemotherapy. There was no statistically significant difference between the AF levels after a neoadjuvant chemotherapy and the HRQoL domains. **Conclusion:** Patients who had higher levels of pre-diagnosis PA had better overall QoL after neoadjuvant chemotherapy and there was no difference between groups when assessing the levels of PA and HRQoL after the AC neoadjuvant chemotherapy regimen.

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IMPACT OF NUMBER OF POSITIVE LYMPH NODES AND LYMPH NODE RATIO ON SURVIVAL OF WOMEN WITH NODE-POSITIVE BREAST CANCER

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Purpose: This study aimed to evaluate the association of axillary lymph node ratio (LNR) and number of positive lymph nodes (pN) with the risk of breast cancer recurrence and death. **Methods:** A retrospective cohort study of node-positive stage II e III breast cancer patients diagnosed and treated between 2008 and 2009 at the Brazilian National Cancer Institute (INCA), Brazil. Overall and disease-free survival curves for number of positive lymph nodes (pN) and lymph node ratio (LNR) risk groups were constructed using the Kaplan-Meier method and compared by the log-rank test. Multivariate analysis was performed using stepwise forward Cox regression models. **Results:** In total, 628 women with node-positive breast cancer were included. Most patients (69.5%) had advanced clinical stage tumors (≥ IIB). The median follow-up was 58 months (range: 3-92 months). The adjusted recurrence hazard of pN2 and pN3 patients was 2.47 (95% Confidence Interval [CI] 1.72–3.56) and 2.42 (1.62–3.60), respectively, compared to pN1 patients ($p<0.001$), while the hazard of intermediate (0.21-0.65) and high-risk (>0.65) LNR was 2.11 (1.49–3.00) and 3.19 (2.12–4.80), respectively, compared to low-risk LNR (≤0.20) patients ($p<0.001$). On the other hand, the hazard of death of pN2 and pN3 patients was 2.17 (1.42–3.30) and 2.41 (1.53–3.78), respectively ($p<0.001$), and the hazard of intermediate (0.21-0.65) and high-risk (>0.65) LNR patients was 1.70 (1.13–2.56) and 2.74 (1.75–4.28), respectively ($p\leq0.001$). **Conclusion:** Higher pN and LNR were associated with shorter disease-free survival and overall survival times.

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SENTINEL LYMPH NODE BIOPSY AFTER NEOADJUVANT CHEMOTHERAPY IN WOMEN WITH BREAST CANCER: CLINICAL PROFILE AND PROGNOSIS

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Objectives: Describe the frequency and factors associated with the indication of Sentinel lymph node biopsy (SLNB) after neoadjuvant chemotherapy (NACT) and the impact of SLNB on prognosis. **Methods:** Retrospective cohort study of women with breast cancer submitted to NACT from january 2013 to july 2015 at Hospital do Cancer III of the National Cancer Institute (HCIII/INCA). The data were collected in electronic and physical records. This study was approved by INCA's ethics and research committee. **Results**: A total of 783 women with mean age of 52 years (±11) were included. The majority were diagnosed with clinical stage IIIA (23%) and IIIB (33%), and with a Luminal A subtype (ER+ and / or PR+, HER2-) (52%). After NACT, complete response was observed in 15% and partial in 58%. Mastectomy was performed in 85% of the women, and 25% were submitted to SLNB (alone 14% and SLNB + Lymphadenectomy 11%). The factors associated with SLNB were: Initial clinical stage (OR = 6.22 95%CI 4.28–9.06) and complete response to NACT (OR=1.96 95%CI 1.29–2.97). In the follow-up, were observed 23% of recurrence /metastasis and 13% of death. After adjustment (cT, cN and NACT response), there was no association between the performance of SLNB with recurrence/metastasis (HR=1.51 95%CI 0.93–2.46) and death (HR=1.48 95%CI 0.76–2.90). **Conclusion**: The indication of SLNB after NACT was associated with initial clinical stage and complete response to NACT. After adjustment, SLNB was not associated with prognosis.

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SURVIVAL IN PATIENTS WITH STAGE IV HER2 POSITIVE BREAST CANCER

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Objective: To evaluate the survival of patients with metastatic breast tumors, with human epidermal growth factor (HER2) receptors, present and treated in Unit 3 of the National Cancer Institute. Methodology: Retrospective cohort study with women diagnosed and treated in Unit 3 of the National Cancer Institute, in the years 2008 and 2009 (n=2035). For this analysis, patients with HER2 positive at diagnosis, clinical staging I to III (n=412) and who progressed with metastasis in the follow-up period (n=92) were selected. In this group of patients, 15.2% did herceptin palliative and 84.8% did not. Results: Among the 92 positive Herb 2 patients who progressed with distant metastasis, 32.6% had bone or soft tissue, 62% visceral and 5.4% locoregional metastasis, respectively. The mean survival of the patients was 38.4 months. Among those taking Herceptin, the mean survival was 49.7 months, while those who did not were 35.9 months. Among 31 patients with bone metastasis, enrolled between 2007 and 2009, 5 (16%) did Herceptin and 31 (84%) did not. The mean survival was 51.3 months and 31.7 months, respectively. In general, those patients who did not take Herceptin had a 2.35-fold higher risk of death compared to those who did (HR=2.35 95%CI 1.12–4.95, p=0.024). Conclusion: The use of trastuzumab in the palliative treatment of Herb2 positive patients had an impact on survival in the present study, including isolated bone metastases.

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PROFILE OF MAMMOGRAPHIES REALIZATION IN BRAZIL BETWEEN 2013 AND 2014

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Objective: The objective of this study is to outline the profile of patients who undergo mammography in the Brazilian scenario between the years of 2013 and 2014. **Methodology:** It is a retrospective and quantitative study presenting a cross-sectional approach carried out in Brazil between the years of 2013 to 2014. It was based on the general female population who underwent mammography in this selected period. Data were obtained from the Department of Informatics of the Unified Health System (DATASUS), of secondary order, in the database category of the Breast Cancer Information System (SISMAMA). The age of the women studied, their region of origin, the results found in this exam, as well as their final conduct according to each case were also used as variables. **Results:** During the analysis period of the study, 4,041,101 mammograms were performed in women aged less than 10 years older to 70 in Brazil. Of these, the prevalence among those aged between 50 and 54 years is responsible for approximately 20% of the total number of exams. In addition, most mammograms were performed in the Southeast region, followed by the Northeast, South, Central - West and North regions of the country. According to the results obtained in the total number of mammograms performed, 1,930,433 were classified as Bi-RADS 2, and 50,921 were suspected or highly suggestive of malignant breast neoplasm. Among the latter, the prevalent age group was those older than 70 years. Regarding the conducts for mammograms performed, 3,442,629 women were instructed to repeat the examination every 2 years, 50,921 were biopsied and only 2,689 were referred for specific therapy. **Conclusion:** It is known that breast cancer is the most prevalent cancer in women all over the world and thus its screening and early diagnosis is necessary. One of the main risk factors is age, justifying the highest number of mammograms among women over 50 years of age, as well as their highest occurrence in the elderly. Also, expanding screening in regions such as the Midwest and North regions to women with risk factors and clinical symptoms is essential to know the neoplasia in its earliest stages and to obtain better prognosis in the ducts.

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RESOURCES USED BY THE SUS WITH RESECTION OF NON - PALPABLE BREAST CODES FROM 2015 TO 2017

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Objectives: To evaluate the expenditures to the health system with the non-palpable breast node resection procedure in the Unified Health System (SUS) between the years 2015 and 2017. **Methodology**: This is a retrospective and quantitative study with an approach by cross-sectional study carried out in Brazil between the years 2015 and 2017. The sample population was the Hospital Information System (SIH) of SUS with data obtained from the DATASUS platform, of secondary order. The year of the procedure, the emergency or elective care, the region of the country and the average hospitalization value, the total value per year, the days of hospitalization and the public or private nature were used with variables. **Results**: Between 2015 and 2017 a total of 17,703,833 million reais were spent on resection of non-palpable breast lesions with oncology marking, and the year 2017 represented the highest percentage of expenditures, with 34 % of total value. The years 2015 and 2016 represented similar but smaller expenditures, with 32.5% and 33.4%, respectively. In addition to being the year in excess of expenses, 2017 was also the year in which there was a higher hospital admission authorization (AIH), with 4,880, representing 33.8%, while the other years were 32.5% in 2015, and 33.6% in 2016. According to the AIH, the cost for each hospitalization has an average value of 1878.15 reais per patient who needs the procedure. Among the regions of Brazil, the highest number of AIH approved in the Southeast Region is 44.11%, followed by the Northeast Region, with 30.9% and the South Region, with 22.11%. The Midwest and North regions totaled 1.6% and 1.1%, respectively. Most of the procedures were carried out on an elective basis and little in an emergency, representing 81.8% for the first option and 18.2% for the second. Regarding the payment scheme, 73.5% of the procedures are in the category ignored, while a small amount, 3.4%, were in the private regime and 23% in the public regime. **Conclusion**: It is noticed that breast cancer is still a neoplasia present in the population due to the large number of procedures that are performed for the reversal and improvement of the patient's condition. Still, it is a pathology that demands large expenditures to the Brazilian public and private health system, with coverage in all regions of the country, however, with emphasis on the Southeast Region, where there was a greater quantity of AIH approved, while the North Region exhibited the less quantity.

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ANALYSIS OF THE CLINICAL INDICATIONS FOR MAMMOGRAMS IN BRAZIL FROM 2013 TO 2014 BY THE UNIFIED HEALTH SYSTEM

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Objective: To elaborate an analysis of the character of mammograms performed in Brazil between 2013 and 2014 by the Unified Health System (SUS) in relation to the indication profile and the patients submitted to the examination in this period. **Methodology:** The data from the study originated from the Department of Informatics of the Unified Health System (DATASUS), in the database category of the Breast Cancer Information System (SISMAMA). It is based on a retrospective and quantitative cross-sectional study done in Brazil between 2013 and 2014 with a population composed of women of all age groups who underwent mammography during the evaluation period. Was used as analysis variables: the clinical indications of the exam, the age groups of the patients involved and their declared race. **Results:** In the study period, 4,041,101 mammograms were performed, of which 2,315,907 were in women aged 50–54 years. Of the races analyzed in the survey, only 642 women declare themselves indigenous, in contrast, 2,304,282 have relinquished this information. Of the total number of tests performed, 97.44% had a screening character, while 2.56% were intended for diagnosis. Women between the ages of 45 and 50 predominated with regard to diagnostic mammograms in the year in question, while those with 50-54 years of age were the majority on screening mammograms. Regarding the clinical indication of the test, 931,994 women had no prior clinical examination with a complementary indication, and 1,857,189 had never performed previous mammograms. **Conclusion:** Strategies for the early detection of breast cancer are based on premature diagnosis in symptomatic patients or screening in those who do not present symptoms. Routine physical examination by a health care professional as well as a detailed medical history are essential to perform the correct indications for complementary examinations and careful evaluation of the risk factors related to the neoplasia, and thus to reduce their false-positive and iatrogenic results caused by them. Under SUS, therefore, it is imperative to perform the basic physical examination of the breast to avoid unnecessary expenses with other methods of tracking.

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THE PREVALENCE OF MALIGNANT AND BENIGN BREAST NEOPLASMS IN BRAZIL BETWEEN 2010 AND 2014

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Objective: To compare the prevalence of benign and malignant breast neoplasms in Brazil between 2010 and 2014. **Methodology:** This is a quantitative, population-based, cross-sectional study in Brazil between 2010 and 2014. A study population composed of cases of mammary neoplasia was used. Data were obtained from the DATASUS system, of secondary order, in the category of database in the Hospital Information System of SUS (SIH/SUS). It was used as variable year, sex, age, type and character of care. **Results:** In Brazil, between 2010 and 2014, benign and malignant breast neoplasms total 267,038 cases, with a progressive increase between the years. Half of the cases are concentrated in the southeast region, with 50.12%, followed by the northeast region, 21.70%, southern region, 19.84%, center-west, 5.41% and north, 2.89%. Of the total, 92.25% are malignant neoplasms of the breast. The female sex prevails over the male in the number of cases, with 98.34% versus 1.65%. In relation to age, there is a distribution in all age groups, prevailing in the larger ranges, such as 50 to 59 years, 26.55%, 40 to 49 years, 24.86%, 60 to 69 years, 18.95%, 30 to 39 years, 10.41%, 70 to 79 years, 9.91%. Many of the attendances are elective, 66.07%, and others as a matter of urgency, 33.92% and 64.89% are from the private network versus 35.10% of the public network. **Conclusion:** Breast neoplasms are very prevalent in Brazil and most of them are malignant. The southeastern region of Brazil presents the largest number of cases together with the female sex, but it is emphasized that they exist in the male sex. The most prevalent age groups are those over 30 years of age, but this does not prevent them from being found in the lower ranges, such as 20 to 29 years. Therefore, it is necessary to invest more in medical qualification programs, to rank hierarchically and to guarantee quick access to the secondary and tertiary centers for resolutive care, providing the tracking of the disease, aiming in the medium term a greater reduction of cancer mortality.

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HORMONE THERAPY IN TRANSSEXUALS AND THE RISK OF BREAST CANCER

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Objective: To carry out a systematic review of the literature on the relation of breast cancer in transsexual women using hormone therapy. **Methods**: Systematic review of the literature, using the PubMed databases, between 2003 and 2016, using the key words "breast cancer", "femaile-to-male transsexuals", "male-to-female-transsexuals", "Hormone therapy ". From the total of 22 articles found, a total of 15 articles were selected in the last 13 years. Six studies were excluded because they were not the morphological alterations of the use of hormonal therapy in transsexuals, as well as the possibility and occurrences of breast cancer in these. **Results**: The nine articles selected show the relationship between hormone therapy and breast cancer in transsexuals, taking into account that in all the cases reported, the patients had firstdegree relatives with a history of breast, ovary or prostate cancer. However there are differences between studies. Lancet Oncol. 2013 September sees strong association of breast cancer laughter with serum concentration of testosterone. It discusses the action of testosterone to be aromatized in estrogen and stimulate the direct activation of estrogen receptors, exposed in two cases reported by Shao T, et al. in which in both the expression of estrogen receptors in transsexuals using testosterone presented in 90%. While in a study by SLAGTER, Margarita H. et al. it is stated that testosterone promotes apoptotic effects in cancerous cells of breast cancer. Therefore, the simultaneous presence of high circulating testosterone and estrogens in these subjects could have prevented the biological action of E2, causing a histological image of involution. **Conclusion**: Although not yet studied, when referring to transsexuals from woman to man in use hormone therapy with high testosterone levels, strongly associated with positive family history, risks can not be excluded. As well as the presence of the BRCA2 mutation in transsexuals from man to woman using antiandrogen and estrogen may lead to breast cancer. A full family history is important in evaluating transgender people seeking hormone treatment.

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NEW LABORATORY TESTS FOR DIAGNOSIS AND PROGNOSIS OF BREAST CANCER

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Objectives: To identify new laboratory tests for prognosis and diagnosis of breast cancer. **Methodology**: Literature review, with search of articles in the databases PubMed and Medline, using the descriptors: new laboratory tests, breast cancer, prognosis, diagnosis. A total of 75 articles were selected, of which 41 were adequate for the review research. The inclusion criteria were more recent articles and of high theoretical value for this review. **Results**: The laboratory tests identified can be divided into three groups: the first is those that use computer engineering to form images, three-dimensional models of the breast and to track tumor cells. In the second are those that investigate gene and epigenic expressions. In the third group we have histochemical tests of specific substances associated with breast cancer. In the first group, there are several applications of computer technology, such as CellSearch System software and EPISPOT, which use specialized microscopy to identify tumor cells in breast tissue biopsies. Another example of joint work between pathology and computation are high-resolution imaging exams such as the US-CNBs, a highly-defined ultrasound examination, the ED-CSCT, an examination that uses X-ray scatter to calculate the type and the size of microcalcifications that can occur in breast cancer. Computer technology also enabled the creation of a three-dimensional model of the breast, enabling the physician to accurately visualize the tumor in the midst of tissue layers. In the second group, gene expression screening focuses on joint monitoring, observing the traditional genes, such as BRCA1/BRCA2 and Ki67, and other associated ones, such as the CA72-4 carcinogen antigen and the GRP94 and FN14 biomarkers, since their expression is directly associated with breast cancer. In addition to the genetic markers, epigenetic studies revealed a correlation between methylation of the RASSF1A and CDH1 gene promoters and the prognosis of metastasis in breast cancer. In the third group are improved histochemical tests, which guarantee greater accuracy and specificity, such as the use of chromogenic and fluorescent methods in the evaluation of the estrogen receptor, the automated use of the FISH protocol to reduce tumor cell damage, avoiding sample loss, the analysis of the organizing regions of the nucleus of a tumor cell, the change in the technique of histochemical staining for a better visualization of the endothelial growth factors 2. It is also worth noting the elaboration of new protocols for exams, such as for the analysis of the factor gene of endothelial growth 2. **Conclusion**: The evolution of technology allowed not only the creation of more specific exams but also the improvement of old techniques. In this way, there are now tools that help the physician in the accurate diagnosis and prognosis of breast cancer, allowing a more specific visualization of the health-disease process, that is, the tests allow to identify the uniqueness of the pathology that affects the individual, either by more accurate imaging tests, either by enhancement and identification of new biomarkers, or by enhancement of old histochemistry techniques. These are factors that allow identifying the characteristics of the pathology that affects the individual, increasing the possibilities of diagnosis, treatment and prognosis by the physician.

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INCIDENCE AND MORTALITY OF BREAST CANCER IN WOMEN BY AGE GROUP IN BRAZIL AND LATIN AMERICA

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Objective: Analyse the Latin America data on female breast cancer, comparing by age group the general rates of incidence and mortality with the Brazilian ones. **Methodology:** epidemiological analytic study carried out about the interpretation of data available in the GLOBOCAM stand, referring to the incidence and mortality of breast cancer in South America compared to Brazil. **Results:** There were 67.316 cases of breast cancer in the age group 0 to 74 years, of which 16.412 died, representing a 24% mortality rate. It was possible to identify through data analysis that the highest incidence of breast cancer is in the age group of 50–59 years, where it presented an incidence of 26%, however the highest mortality rate was seen in the age group over 70 years, with a percentage of 29%. In South America, excluding Brazil, it was possible to perceive that the highest incidence of breast cancer is in the age group above 70 years of age, presenting a percentage of 25% of the 48.398 cases. **Conclusion:** From these data it is possible to conclude that the mortality rate does not follow the same age pattern of the incidence rate, that is, there are variations according to age. Such variations reveal that the higher the age group, the higher the mortality rate. This can be caused by the fact that cancer, in this age group, presents a histological grade of higher malignancy, either by a late detection or by the patient's advanced age. Thus, early diagnosis is of great importance for reducing mortality rates and intervening in factors that influence detection is fundamental, such as: accessibility to the health service, coverage of mammography and quality of treatment.

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BREAST PAIN/MASTALGIA DUE TO A FOREIGN BODY IN A PSYCHIATRIC PATIENT: CASE REPORT

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Objectives: To report a case of indication of bilateral mastectomy in a psychiatric patient with breast pain/mastalgia due to a foreign body. **Metodology:** Case report obtained at HC-UFG. The data were collected from medical records and the findings. **Results:** In 02/12/17, during an opportunistic screening campaign for breast cancer, executed by the Mastology Program from Advanced Center for Breast Diagnosis and Academic League of Breast, conjoined with the Municipal Health Secretary from Rubiataba, the patient M.V.S., female, 43 years, birthplace Rubiataba, was examined and referred to the HC-UFG Mastology Department to evaluate the indication of total adenomastectomy. The patient refer that 3 years ago, after her husband death, she developed a severe depressive disorder, which is currently in remission due the treatment. The patient, M.V.S, reports that 3 months later she suffered from sexual abuse that evolved to a bilateral breast pain/mastalgia. During the screening campaign the mammography performed on 29/11/17 was analyzed and evidenced 22 needles in the right breast and 24 in the left one. The patient says that the needles were inserted by the abuser, however the family claims that the patient inserted by herself. In 18/12/17 The Mastology Department requested a psychiatric evaluation, which of was diagnosed with slight intellectual disability , limit intelligence, depression in remission, and humor disorder, without psychiatric contraindication to the chirurgic procedure. Then, the Mastology Department discussed the therapeutic proposal of bilateral adenomastectomy for the excision of the injured tissue and foreign body and the possibility of reconstruction with saline or silicone prostheses. The patient is following up with Tamoxifen 10mg for relieve of breast pain/mastalgia and the service still analyzing the viability of the reconstruction with the breast prosthesis, considering new insertions of foreign body can generate even more damages.

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SEXUAL BEHAVIOR OF WOMEN WITH BREAST CANCER AND IMPACT ON THE COUPLE'S LIFE

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Sexuality is experienced by individuals from their birth until old age, and is related to their history and culture. Sex, a constituent factor of human physical and emotional health, derives from an intrinsic characteristic of humans regardless of their social status, and changes according to the cultural and historical context. Sexual activity is one of the main pillars of individuals' sexuality and well-being, and not only associated with reproduction. The emotional aspects related to sexual dysfunction in people with cancer are common and frequent, and may occur since the diagnosis. Breast cancer is the second most common type of cancer worldwide, the most frequent in women, and the leading cause of death in patients with malignant neoplasms. In the state of Goiás (Brazil), the estimated number of new breast cancer cases in 2017–2018 is 49.51 per 100,000 women. In general, breast cancer tumors present morphological, clinical, and biological heterogeneity, due to different histological grades as well as molecular differences. Breast cancer may have multifactorial impact on the quality of life, sexual relationships, and, consequently, marital relationships of patients. Furthermore, the disease can interfere with patients adherence to endocrine therapy. Breast cancer staging may determine the level of sexual dysfunction in women. At early stages, the most reported symptoms are loss of libido and lack of sexual desire, and at later stages, loss of interest in sex and pain during sexual intercourse. Partners' support and understanding are fundamental for women's psychological acceptance of the disease. However, the partners of women with breast cancer also have psychological impacts, which can lead to premature ejaculation, erectile dysfunction, and depression and anxiety disorders. **Objective:** Verify whether the sexuality of both women diagnosed with breast cancer and their partners is affected and the possible causes. **Methodology:** This is a narrative review. The literature review was based on the strategic planning for the search that included the following steps: 1. Constructing a guiding question that explains the interest of the research; 2. Identifying the elements of the research (variables, studied populations, comparisons); 3. Constructing search strategies using keywords (descriptors); 4. Applying the search strategies developed for this study to the articles found in the PubMed Central (PMC) at the U.S. National Institutes of Health's National Library of Medicine (NIH/NLM); 5. Defining search filters such as articles published in the last 5 years, research carried out with humans, with adults; 6. Exclusion criteria: homosexual couples, quality of life, breast cancer in men, and studies that assessed sexuality in single women. The search strategy applied was: cancer treatment OR female breast cancer AND sexuality OR sexual health AND partner OR couple. The filters were: last 5 years and studies with humans. After applying the search strategy and identifying the studies of interest, the first selection of the material was performed analyzing the titles, followed by the selection of the abstracts, and only at the last level of selection the complete articles were identified and read to compose this narrative review. **Results:** In this narrative review, 150 articles were initially collected and examined. After applying the exclusion criteria, 54 were selected. The authors of the articles included in this review unanimously reported that women diagnosed with breast cancer had impairments regarding their sexual performance, due to physiological, therapeutical, and/or emotional changes associated with the neoplasia since the diagnosis. Breast cancer treatment may cause a decline in couples' quality of sexual life. Depression, anxiety, conflicts in the relationship, and low self-esteem can intensify sexual dysfunction in women treated for breast cancer, and this impairment may last many years after the treatment. Mastectomy may substantially aggravate sexual intercourse during and after treatment due to sequels, which may affect couples' relationships. **Conclusion:** Current therapeutic approaches for breast cancer can considerably affect women's sexual performance due to their adverse effects. Therefore, the negative aspects of dealing with psychological and emotional suffering can be potentially aggravated in women diagnosed with breast cancer. Aiming to minimize this suffering, we propose that psychological and medical interventions be offered to women with breast cancer and their partners, both individually or to the couple, during and after the treatment. However, it is of paramount importance that healthcare professionals be attentive to the slightest signs of sexual dysfunction and recommend psychological follow-up.

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BREAST CANCER SCREENING AMONG BRAZILIAN WOMEN: AN INTEGRATIVE REVIEW

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Objectives: The aim of this integrative literature review was to explore empirical literature surrounding breast cancer screening practice among Brazilian women. **Methodology:** OVID Medline, CINAHL, Lilacs, Scopus and Web of Science/ SciELO were used to identify articles in English, Portuguese and Spanish languages. Twenty eight original articles were included using inclusion and exclusion criteria. **Results:** Most of the studies were developed in the Southeast (n=14) and South (n=7). No studies were found involving populations from North Brazil. The most studies enrolled populations from exclusively urban areas (n=21). Of the total of 91,207 women involved in the 28 studies, 15,801 never had mammograms and 48,944 had mammograms in their lifetime; 555 had never undergone breast clinical examination, and 8,114 had done it at least once in their lives. To screen breast cancer the studies used mammograms (n=21), breast clinical examination (n=11) and mobile mammograms (n=1). White women, with higher schooling, better socioeconomic status have access to better ways of breast cancer screening. **Conclusion:** The gaps in breast cancer screening are related to social and racial inequities and problems about spatial distribution of specialized equipment resources and professional.

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MICROINVASIVE CARCINOMA INITTIALY LABELED AS *IN SITU*

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Carcinoma microinvasors are frequently found in the records of ductal carcinoma *in situ* (DCIS) cases, a factor that may favor non-effective treatment. Survival differs in cases of microinvasion due to the possibility of metastasis. **Purpose:** was to characterize cases of microinvasive carcinoma transcribed as *in situ* and subsequent comparison of survival of these cases in relation to cases of DCIS. **Methods:** We used a secondary database of the Registry of Cancer Population Base of Goiânia and data of the city hall of that city. **Results:** The mean size of the microinvasive lesions associated with DCIS was 1.3 cm, with foci of invasion <1.0 mm, the majority of the positivity for estrogen and progesterone receptors corresponded to 28.6% and for HER2 14, 3%. In addition, 33% of these cases had impaired margins. **Conclusion:** attention different from DCIS should be given to microinvasive carcinoma with regard to registration and diagnosis.

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PHOTOBIOMODULATION IN THE SCARATION OF DEISCENCE AFTER MASTECTOMY: CASE REPORT

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The effects of photobiomodulation on healing occur through the influence of chemical mediators, migration of inflammatory cells and increase of growth factors. Studies emphasize the efficacy in different animal models, however, dosimetric parameters are discrepant. Therefore, the objective of the study is to show a therapeutic option for the treatment of this wound to optimize the other stages of the treatment. This case report refers to a 40-year-old female patient diagnosed with mammary carcinoma followed by confirmation of gestation. The patient had gestational diabetes and on the day of delivery underwent modified radical mastectomy and right axillary lymphadenectomy that evolved with a dehiscence near the axillary cavus. In the evaluation, the patient's main complaint was related to poor healing of the surgical wound and impediment to the start of radiotherapy. A photographic record of the region was carried out, besides a qualitative evaluation of the dehiscence that presented hyperemic, edemaciated and retracted borders. In the main complaint, two physical therapy sessions were performed with a light emitting diode (LEDs) at two wavelengths 470 nm (blue) and 630 nm (red) at 5J / cm2 and the 19 seconds and 1:30 minutes respectively. Resolution was observed in the surgical dehiscence. Photobiomodulation proves to be an important resource for the treatment of dehiscence after mastectomy.

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ANALYSIS OF THE DETECTION OF MALIGNANT BREAST CANCER LESIONS IN WOMEN IN THE STATE OF GOIÁS IN THE PERIOD 2010-2013

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Objective: To analyze the detection of malignant lesions of breast cancer, through the following indicators: clinical breast examination and mammography, in women in the state of Goiás from 2010 to 2013. **Methodology:** This is a descriptive study using data from the Breast Cancer Information System (SISMAMA). **Results:** It was observed that in the period of 2010 the detection of malignant lesions by clinical examination overlapped the imaging method (mammography) in 17.88%. In 2011, this difference increased to 24.23%. Following the same trend, this difference increased to 53.53% and 59.83%, in the years of 2012 and 2013, respectively. **Conclusion:** The results demonstrate that the detection of malignant lesions by clinical examination in the breast overlaps mammography, evidencing a failure in the early diagnosis of breast cancer in Goiás. Some limitations in adherence to mammography screening are misinformation about the examination by the target public, the lack of training of health teams and the lack of machines in Brazil associated with a poor distribution of machinery. Since mammography is the only method capable of reducing breast cancer mortality in an absolute way, it is fundamental to implement strategies to cope with the low adherence to this imaging examination.

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COMPARATIVE ANALYSIS OF THE INCIDENCE AND MORTALITY OF BREAST CANCER IN EUROPE AND LATIN AMERICA AND THE CARIBBEAN IN 2012

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Objective: To compare the incidence and mortality of breast cancer in Europe and the countries of Latin America and the Caribbean in 2012. **Methodology:** An ecological analytical study carried out by the interpretation of the data available on the GLOBOCAN platform, concerning the incidence and mortality of breast cancer in Europe and in the countries of Latin America and the Caribbean in 2012. **Results:** In Latin America and the Caribbean, the incidence of breast cancer, in absolute numbers, is 152,059, while the mortality rate is 43,208. In Europe, the incidence is higher, 458,718, with a mortality of 131,347. Incidence and mortality rates are higher in Europe than in Latin America and the Caribbean: the incidence rate in the former is 119.5 / 100. 000 inhabitants and in the second it is 49.8 / 100.000 inhabitants, while the mortality rate in the former is 34.2 / 100,000 inhabitants, while in the latter it is only 14.1 / 100,000 inhabitants. If, on the other hand, we compare the incidence / mortality in women, by age group, in both regions, we can conclude that these data are always higher in the group aged 40 years or older. In Europe, the incidence of breast cancer in women aged 40 years or older is 94.55%, while mortality in the same group represents 97.8% of the total. On the other hand, the incidence of breast cancer in Latin American and Caribbean women aged 40 years or older is 89.4%, while mortality in this age group corresponds to 92.9% of the total. **Conclusion:** Breast cancer accounts for 25 percent of all breast cancer cases in the world and is also the leading cause of cancer-related death in this population, according to the WHO. In Latin America, it is the second leading cause of death among women. Although developed regions have higher incidence rates, an overall increase in the incidence of breast cancer is seen each year as a result of encouraging screening and early diagnosis, two strategies that seek to reduce the mortality rates of the disease. However, less developed countries have lower survival rates due to late diagnosis, as well as lack of adequate diagnosis and treatment. Thus, despite the highest incidence rates in developed countries, almost 50% of all cases are in less developed countries, which account for about 58% of deaths (GLOBOCAN 2008).

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EPIDEMIOLOGICAL ANALYSIS OF THE DISTRIBUTION OF MAMMOGRAPHY PERFORMED IN GOIÁS, MATO GROSSO, MATO GROSSO DO SUL AND FEDERAL DISTRICT FROM 2010 TO 2013

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Objective: To evaluate the spatial distribution of mammograms performed in the central-west region, comparing the results obtained from the State of Goiás to the other States of the region (Mato Grosso, Mato Grosso do Sul and Federal District). **Methodology:** This is a descriptive study, quantitative analysis, based on data collected from any mammography type, from January 2010 to December 2013, available in the Breast Cancer Information System (SISCAM) of the Ministry of Health. **Results:** Organizing into categories, the Federal District was the state that most increased the number of mammograms in absolute and relative numbers compared to the states of the center-west region. This data is very relevant, since it indicates a greater coverage of the health system and investment when compared with the others. In addition, a very important indicator is the capital/state ratio since it shows whether the coverage of mammograms is concentrated only in the metropolitan region or if it can give access to a large part of the population of the state in a uniform way. Mato Grosso is the state with the largest distribution of mammography coverage, compared to Goiás and Mato Grosso do Sul. Only 33.54% of mammograms were performed in the capital of Mato Grosso, while in Goiás (56.53%) and in Mato Grosso do Sul (51.79%) in their respective capitals. It should be noted that the study period was from 2010 to 2013, during which data were collected. **Conclusion:** The results show significant growth of mammograms performed in the center-west region. This shows that coverage and access to this exam is being expanded. However, it also shows that the central regions performs larger numbers of mammograms in relation to the other regions of the states. This corroborates to an unequal coverage estimate for the population of the states. In addition to making access difficult due to patient locomotion problems to go to the capitals / central regions to perform the exams, this concentration of exams in the metropolitan regions can cause a crowding in the services, making access to the breast cancer screening even more difficult.

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LIPOFILLING – DIFFERENT TECHNIQUES, SIMILAR RESULTS – EXPERIENCE OF THE ONCOPLASTIC COURSE OF SBM DE JAÚ - SP

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Objectives: To analyze the experience with the surgical technique of lipoenxertia of the Hospital Amaral Carvalho in Jaú - SP, during the first course of Oncoplastica by the Brazilian Society of Mastology. **Methodology:** Retrospective analysis of a series of cases, in which the lipofilling technique was used, carried out in the 1st Oncoplastic course of SBM of Jaú - SP in the year 2016–2017. Eight patients were identified using this technique. Their indications, techniques used and results were evaluated by pre and post operative photographic comparison. **Results:** During the course, eight cases were performed with the lipofilling technique in the 12 modules, of a total of 103 patients operated and 198 procedures performed. The mean age of patients submitted to lipofilling was 48.8 years (range 31–66 years). The median volume of injected fat was 232.5 mL (range 40–500 mL). The surgeries were indicated with three specific purposes: one (01) case for preparation of the recipient bed of the reconstruction that had been irradiated and the skin was not of good quality; two (02) cases of breast defect repair after conservative surgeries in irradiated breasts; and five (05) cases to improve breast contours in reconstructed breasts (4 cases of autologous tissue and 1 case of reconstruction with prosthesis). Two techniques were used, Colleman and Colleman modified, the latter with acquisition of larger volumes of fat. The pre and post operative photographic studies did not show important aesthetic differences with the two techniques. **Conclusions:** It is an important refinement technique, technically and oncologically safe, which improves the initial surgeries. Very common in oncoplastic is the need for a second intervention to correct defects, whether large or small, and this technique should be included in the arsenal of breast surgeons. When we think of patients previously submitted to radiotherapy and need new surgical intervention, this procedure becomes almost mandatory.

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TATTOO – FORMAL INDICATION OF RADIOISOTOPE USE TO LOCATE SENTINEL LYMPH NODE? REPORT OF TWO CLINICAL CASES

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Introduction: Tattoos have gained popularity in recent years and have become socially accepted between men and women. It is estimated that 14% of the American population has at least one. The process of skin pigmentation creates an inflammatory reaction and in a few days the macrophages encompass the injected pigments. The carbon particles migrate through the lymphatics and within 3 days the pigments can already be seen in the lymph nodes. Tattoo ink and inflammation can block lymphatic chains, influencing detection and sensitivity, causing false-negatives in sentinel lymph node rates. **Case-report:** Two women aged 46 years, with breast cancer. The first one with left breast breast lesion and submitted to quadrantectomy with sentinel lymph node biopsy. The second had bilateral breast cancer and underwent skin-spared adenomastectomy. Both had a tattoo on the back ipsilateral to the tumor and underwent sentinel lymph node biopsy with the radiopharmaceutical technique alone. The lymph nodes were detected with the radioisotope and a parasitizing lymph node of blackened aspect that did not capture. The pathological anatomical study confirmed the presence of the tattoo pigment in the lymph nodes stained. **Discussion:** Axillary staging continues to be an important prognostic factor in breast cancer in the last decade, lymphadenectomy has been replaced by the search for sentinel lymph nodes in clinically no axilla without compromising. The combined technique using radioisotope and patent blue results in higher rates of sentinel node identification. The popularization of the skin tattoo may bring a new paradigm for the surgical staging of the armpit. The pigments can drain to the locoregional lymph nodes causing inflammation and consequent obstruction of the lymphatic channels, compromising their biopsy. The pigment may further hide the presence of metastatic cells or promote detection of the false sentinel if used only with the use of patent blue. Due to the pigmentation of regional lymph nodes by tattoo ink, there may be a failure to identify the true sentinel, and a "pseudosentinella" is identified. When they are located superficially in the armpit they can mimic the lymph node dyed blue, causing the true sentinel to be lost and the patient to undergo staging. **Conclusion:** Breast surgeons should be aware of the presence of tattoos in patients who will do sentinel lymph node screening, especially those near the drainage area to be screened. This may lead to the choice of technique and may be an indication of the use of the radioisotope as a method of choice or at least a combined technique. The use of only the blue patent may confuse the surgeon and remove only the lymph node stained by the tattoo, generating a false negative in the assessment of the axilla and impairing oncologic staging.

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USE OF ASPIRATIONAL PUNCTUATION OF TUMORS WITH FINE NEEDLE (FNAB) FOR THE DIAGNOSIS OF DUCTAL CARCINOMA: ANALYSIS OF CYTOPATHOLOGICAL EXAMINATIONS DONE IN BRAZIL BETWEEN JANUARY 2012 TO JANUARY 2014

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Objective: To analyze the number of exams performed through FNAB, with emphasis on positive results for malignancy, compatible with ductal carcinoma. **Method:** Cross - sectional study based on data from 6,433 fine - needle aspiration of breast nodules performed between January 2012 and January 2014, registered in Brazil according to the data from SisMama- DataSus. The age range, the states of the country with the highest prevalence and the cytological analysis were evaluated. The nodules were classified as benign, of indeterminate malignancy, suspected for malignancy or malignant. The chi-square test was performed with 5% significance. **Results:** Were performed 6433 FNA tests in women aged 50-64 years; being 5560 benign cases (86.43%); 111 undetermined malignancy (1.73%); 347 suspect for malignancy (5.39%); 415 positive for malignancy (6.45%). Of these, 319 exams (76.87%) were identified in FNAB as Ductal Carcinoma, being 111 between 50 and 54 years, 108 between 55 and 59 years, and 100 between 60 and 64 years. Statistically, there was an association between the FNA score and the age group, where 10.42% of the women between 60 and 64 years were diagnosed with malignant nodules ($p<0.05$); in the age group between 55 and 59 years had 132 positive results for malignancy of 1911 exams performed (6.91%); and in the age group of 50 to 54 years had 143 positive results for malignancy of 3178 tests performed (4.50%). The states with the highest prevalence of Ductal Carcinoma cases are the states of São Paulo and Minas Gerais, with 75 and 61 cases (23.51% and 19.12%), respectively. **Conclusion**: It was observed that the majority of the cytopathological examinations carried out resulted in benign processes, but a significant number of malignant processes still exist, and of these a predominance of ductal carcinoma was observed, in which the women between 60-64 years present a higher prevalence. Corroborating with the literature, data showed that the prevalence of positive results for malignancy increased with age. According to the Ministry of Health, this neoplasm is observed in about 80–90% of the cases, and in the present study a rate of approximately 76.87% was observed.

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ANALYSIS OF THE MAIN RADIOLOGICAL FINDINGS OF MAMMOGRAPHIES DONE IN THE BRAZILIAN UNIFIED HEALTH SYSTEM IN THE DISTRITO FEDERAL BETWEEN 2013 AND 2015

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Objective: To analyze the main radiological findings of mammograms performed in the Unified Health System in the Distrito Federal, correlating them with the age group. **Methods:** Cross-sectional study, in which the statistical analysis of variance was analyzed from 96,857 mammographic examinations performed in the Distrito Federal female patients of different age, race/color, from January 2013 to July 2015, being the data obtained from the Information System of Breast Cancer (SisMama). The chi-square test was performed with 5% significance. **Results:** In the analyzed period, 96,857 mammograms were performed in women in the Distrito Federal, a predominant age group age 40–59 years (71.96%). No radiological findings were found in 81.54% of the breasts. When comparing the laterality of the breast regarding the radiological findings, it cannot be compared with the significant statistic (p=0.75). The nodules that appear discretely predominate in the left breast, where as the microcalcifications were more found in the right breast. A total of 16,981 nodules, mostly between 11–20 mm and 1,352 microcalcifications were counted. Of the axillary lymph nodes found, 91.33% were normal. Regarding BI-RADS, it was observed that 15.61% of mammographies were inconclusive (BI-RADS 0). Benign findings were found in 70% (n = 67,834) of mammograms (BI-RADS 2). A total of 2,621 women (2.70%) presented BI-RADS 4, 5 or 6. Analyzing the age group, 57.21% of the women diagnosed with BI-RADS 5 had between 50–69 years (p<0, 05), and 18.71% were between 40-49 years old. **Conclusion:** The close relationship between the radiological findings of the breasts and the age group of the patients leads us to recognize the importance of this examination for the early diagnosis and effective treatment. It was observed that in the great majority of mammograms performed no radiological findings were found. However, it is worth mentioning that the rate of women between 40–49 years diagnosed with BI-RADS 5 is considerable and worrying. This fact evidences the importance of the early screening of the malignant mammary disease through annual mammography from the age of 40, as recommended by the Brazilian Society of Mastology.

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ANALYSIS OF THEIR DELETIONS AND DUPLICATIONS IN THE *BRCA1* AND *BRCA2* GENES IN PATIENTS FROM GOIÁS-BRAZIL WITH SUSPECTED OF HEREDITARY BREAST AND OVARIAN CANCER SYNDROME

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Breast cancer is the second most common cancer in the world, and the most common among women population, about 5% to 10% of cases are hereditary and half of them are caused by hereditary breast and ovarian cancer (HBOC), caused by variations in *BRCA1* and *BRCA2* genes. The present study aimed to identify deletions and duplications prevalence in *BRCA1* and *BRCA2* genes on breast cancer patients in Goiás, Brazil, and was approved by the National Research Ethics Committee according with number of CAAE 50626315.6.0000.5078. Were evaluated 46 breast cancer's patients who fulfilled National Comprehensive Cancer Network (NCCN) criteria for HBOC syndrome screening. About 4 mL blood sample was collected from each patient for DNA extraction using commercial kit and the Multiplex Ligation Dependent Probe Amplification (MLPA) technique was performed using the SALSA MLPA P002 *BRCA1* and SALSA MLPA P045 *BRCA2/CHECK2* kits. The majority of the patients were female (97.83%) and the mean age of the patients was 37.52 years. In this group, 43.47% of the patients were younger than 35 years at the time of diagnosis and 35% of them were diagnosed with triple negative tumors. The most common molecular subtype was luminal A (46.2%) followed by triple negative tumors (28.20%). Four family history profiles were observed, which 45.65% had a family history of breast cancer and other cancers, 33% had a family history of cancer without cases of breast cancer, 17.39% had only a personal history of cancer in the family and 4.34% of the patients had only a family history of breast cancer. No patient was found with rearrangements in the *BRCA1* gene. In the *BRCA2* gene, one patient (2.12%) presented a false positive result for the heterozygous deletion of the 27 exon, which may have been caused by the presence of a small change in the probe binding region. This was the first study performed to analyze large deletions and duplications in patients from the central-western region of Brazil. Can be conclude that the frequency of large deletions and duplications in the *BRCA1* and *BRCA2* genes is low in the population of Goiás.
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A FUNCTIONAL *IN VIVO* SHRNA SCREEN FOR THE IDENTIFICATION OF TRIPLE-NEGATIVE BREAST CANCER METASTASIS SUPPRESSOR GENES

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Objective: When diagnosed early, breast cancer can be treated with a great rate of success. However, once the disease reaches metastatic stage, spreading to organs such as lungs and bones, the available treatments are extremely limited and prognosis is poor. This is particularly true for the triple-negative subtype. By identifying genes that regulate metastasis, it would be possible to predict the patients whose disease is more likely to spread, and it would create an opportunity to develop more effective therapies. **Methods:** Using a genome-wide lentiviral shRNA library, we initiated an *in vivo* functional screen aiming to identify genes whose reduction in expression levels, in non/poorly metastatic murine triple-negative breast cancer cells (67NRch1/66cl4ch14, respectively), would lead to spontaneous metastasis *in vivo*. **Results:** Dozens of putative metastasis suppressors were identified, in a wide range of organs, by conventional and next generation sequencing. These candidates were further subjected to an *in vitro* RNAi screen in 66cl4ch14 cells, involving viability, wound healing and adhesion assays. **Conclusion**: Integrative analysis of both screens (*in vivo* and *in vitro*), literature review, RNA-seq and bioinformatics analysis of gene expression and clinical outcome (Oncomine/Breastmark) indicated highly-confidence candidates to be taken for further analysis and validation *in vivo*. Additional *in vivo* and *in vitro* experiments, aiming to validate the obtained candidates as *bona fide* metastasis suppressor genes, as well as elucidate their possible mechanisms of action, are ongoing.

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AESTHETIC OUTCOMES AND PATIENTS SATISFACTION AFTER DELAY/IMEDIATE AUTOLOGOUS BREAST RECONSTRUCTION

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Aim: The timing and aesthetic outcome of the breast reconstruction may be affected by the need for radiation therapy (RT). Autologous reconstruction is a novel surgical approach for patients in whom the need for adjuvant RT after mastectomy is preoperatively unknown. The aim of this study was to evaluate the outcomes and satisfaction of breast reconstruction using a fat-grafted latissimus dorsi flap in immediate and late reconstruction. **Method:** A total of 18 patients were submitted to autologous latissimu dorsi flap, with 11 immediate and 7 late reconstructions. Patient demographics, surgical characteristics, and complications were recorded. During outpatient follow-up, the reconstruction was evaluated and compared to the contralateral breast in relation to shape, volume and symmetry. Patients scored their satisfaction using a like scale between 12–18 months after surgery, and two surgeons performed their evaluations in that same time interval. Results: Of the eleven patients submitted to immediate reconstruction, ten performed neoadjuvant chemotherapy, and 9 performed adjuvante radiotherapy. All patients who underwent late reconstruction had undergone radiotherapy prior to reconstruction. All the flaps received autologous fat only in a surgical time prior to the confection of the flap. All flaps had 100% viability. In the subjective evaluation through the like scale of the shape, volume and breast symmetry, it was evidenced that the patients were more satisfied than the physicians in all parameters analyzed, with good and excellent evaluation of greater than 80% in relation to the shape and symmetry, this evaluation proved to be in agreement with the medical evaluation, and by the physicians the evaluation was better in relation to the symmetry, 64% classified between good and excellent. In the separate assessment of patient groups, we can note that even after adjuvant radiotherapy patients who underwent immediate reconstruction were more satisfied than patients submitted to late reconstruction, concentrating the evaluation in excellent in 77,8% in relation to the form, 55,6% volume and 44,4% in symmetry. Radiotherapy does not seem to cause great damage to the breast reconstructed by this technique. We conclude that the autologous latissimu dorsi flat is an accessible procedure, with long-term and lowcost results to the health system, and can be performed in small centers and with a high patient satisfaction rate

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THERAPY OF DIGNITY: STRATEGY FOR THE CONSTRUCTION OF A LEGACY AT THE END OF LIFE

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Introduction: Dignity Therapy is a tool proposed by Chochinov et al. (2005) that aims to build a legacy through a letter written with the patient in palliative care, which can be delivered to loved ones in life or after his death. The multidisciplinary team can use this technique in their practice, not only with the purpose of promoting patient care while preserving their dignity, but also offering a holistic attention to the patient / family care unit. **Objective:** to report a patient experience based on Dignity Therapy intervention. **Method:** This is a descriptive, case study. The activity was developed in a large private hospital, in São Paulo, in February 2018. The sample consisted of a 53-year-old patient with advanced malignant neoplasm at the end of life. The intervention was conducted in two meetings with the formulation of 17 letters dictated and signed by the patient and written by the chaplain of the service in the period that preceded her palliative sedation. All the letters were destined to the daughter in order to open them over the next few years. **Result:** After the preparation of the letters, the patient's psychosocial suffering was improved, which consisted of no longer participating in the main moments of the daughter's life due to her impending death, as well as the possibility of retrieving memories and projecting expectations, manifesting hope and become, symbolically, a participant in the daughter's future. **Considerations:** It is considered that the team's performance in an interdisciplinary approach, and based on the therapy of dignity, contributed with the care of the intense psychosocial suffering experienced by the patient in the terminal phase of the disease.

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PROGRAM OF QUALITY CONTROL IN MAMOGRAPHY IN THE STATE OF GOIÁS: EXPERIENCE OF 11 YEARS

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Objective: To evaluate the results of the last ten years of a Mammography Quality Control Program in Goias (PCQMGO). **Methods:** The unit of observation was the Diagnostic Centers (CD), which performed mammography in the state of Goias, from 2007 to 2017. The structure data were collected and tests were performed to evaluate the image quality, the equipment performance parameters and the radiation dose applied in the examinations. **Results:** In 2007, PCQM-GO 103 equipment was registered, 24% of which were CR-type digital and 76% were conventional. In 2017, 197 CDs were registered, of which 160 were in operation, with 164 equipment, 87% of which were digital CR type and 3% DR type, and 10% were conventional. It was observed that, during the period evaluated, 37 CD discontinued mammography. Initially, the technical parameters that presented improvement due to the quality control action were related to the adjustments of the breast compression force, the Automatic Exposure Control device and the alignment of the compression tray. In the last evaluation, 87.3% of the CDs showed compliance in image quality, 71.8% in the Simulator Input Dose and 72.2% in the tension accuracy. **Conclusion:** Experience in the execution of the Program showed that it is possible to maintain greater quality and risk control in mammography.

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"O TOQUE PELA VIDA": THE IMPORTANCE OF THE PINK OCTOBER CAMPAIGNS FOR WOMEN HEALTH IN JATAÍ, GO

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Objectives: The extension project "O Toque pela Vida" was created in 2016 by teachers, administrative technicians and Medicine students from the Federal University of Jataí (UFJ), in partnership with the Jataí's Municipal Secretariat of Health (MSH). It aims to inform and guide the population regarding etiology, risk factors and early detection of Breast Cancer (BC), in addition to providing preventive examinations to women. **Methodology:** For the project execution, study groups were realized out monthly for the discussion of articles and clinical cases about BC. The information obtained during the groups discussions was used to design pamphlets, banners, posters, T-shirts and ribbons, symbols of the October Pink campaign. Extension activities and educational materials were disseminated on social networks, local radio and television programs. The activities were developed in the main Basic Health Units (BHUs) and in the Raízen Company of Jataí. Among these activities, on October 18, 2017, project students lecture on BC in the Raízen Company. On October 6, 2017, project participants went to BHUs to distribute information materials about BC and to disclose the D-Day Campaign. This campaign took place at BHU James Phillipe Minelli on October 28, and in the external area of the Unit, passwords were given to women for they could receive medical attention and care. Meanwhile, the project members measured the patients' pressure and glycemia. In addition, patients received guidance and clarification about BC, regarding risk factors, symptoms and early detection of cancer. The orientation activities were performed using anatomical breast molds, posters and ribbons distribution. Inside the unit, the patients updated the Unified Health System (UHS) card and filled in the necessary forms for medical care. The medical service were conducted by physicians, along with medical students. During the examinations, population screening for BC was verified, and women over 50 years old and/or presenting changes in clinical examination were scheduled for mammography. **Results:** During the activities held in the company, around 100 women employees, attended the educational lecture and, at the end, asked questions about BC. The project "O Toque pela Vida" was more widely accepted by the population, compared to the year 2016, which was the beginning of the project. In this year, the actions were focused only on the BC guidelines. However, in 2017, the partnership with MHS and the wide dissemination in the BHUs and media, allowed the project growth. Thereby, the D-Day brought around 200 women to the BHU James Phillipes Minelli. Of the 200 women, 152 were scheduled for mammograms performed by professionals from the Jataí's MHS, 09 were unilateral for diagnosis and 143 were bilateral for tracking the BC. Mammographies were scheduled between October 31 and December 1, 2017. **Conclusion:** The partnership established between the project "O Toque pela Vida" and the MHS shorted mammography waiting process in the Unified Health System (UHS). Thereby, the scheduling was quick and accessible to a great number of women, during the D-Day in October Pink Campaign. In addition to the activities developed during October, the study groups qualified the Medicine students and they were able to transmit the information to women population in a clear and correct way, taking into account that the project is composed by fresh and senior students. Therefore, the project proved itself of great relevance for the population, by providing more information and effecting the prevention and early diagnosis of breast cancer.

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RETROSPECTIVE COHORT STUDY WITH SURVEY ANALYSIS OF BREAST CANCER SUBMITTED RADIOSURGERY BY CEREBRAL METASTASIS IN 10 YEARS

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Objectives: Breast cancer is the second most common type of cancer associated with brain metastasis. Symptomatic brain metastasis are diagnosed up to 16% of patients with metastatic breast cancer. The risk of brain metastasis in ten years depends on the phenotypic subtypes of breast cancer. Luminal A with a risk of 0.7%; Luminal B, 12%; Luminal HER2 Positive, 8%; HER2, 12%; and Triple Negative, 7%. Stereotactic Radiosurgery (SRS) is one therapeutic modalities used to treat of brain metastases, which offers local control and survival comparable to neurosurgery. This study aims to evaluate the epidemiological profile of patients submitted to radiosurgery, correlate survival, and time tumor progression in the brain. **Methods:** Data were collected from patients with diagnosis of breast cancer brain metastasis treated with SRS from 2007 to 2017 at Hospital Araújo Jorge/Goiânia/Brazil. It was analyzed immunohistochemistry pattern, number of lesions treated with SRS, neurosurgery, whole brain radiotherapy (WBRT). Statistical analysis was performed using Fisher's test and Kaplan-Meier curve, considering 5 criteria separately: overall survival (OS), progression-free survival (PFS) for the central nervous system (CNS) after radiosurgery, brain disease free survival (DFS) after diagnose and survival after radiosurgery for brain metastasis (SRC). **Results:** In a time 10 years, total 78 patients with brain metastasis underwent to SRS, 71 (91%) were treated with a single dose procedure and six (8%) with a five fractions procedure. Among these, 59 (76%) were submitted to SRS in a single, 15 (19%) in a double, and four (5%) in three procedure. The number of lesions treated ranged from one to six metastases. Most patients were triple negative (30%) and HER2 positive (30%). Twenty patients (26%) underwent to WBRT, 60% after SRS. 34 patients (44%) presented brain disease progression after the first SRS, in the mean time of 9 months and 17 patients (22%) died after 19 months, and OS 78% The mean of follow-up was 12 months, with the maximum of 60 months. **Conclusion:** SRS is a therapeutic tool that improves survival, providing better quality of life and lower neurocognitive deficit when compared with WBRT in the treatment of brain metastases. WBRT can be avoided up to 3/4 of the population that was treated by SRS as a primary treatment for breast câncer brains metastasis and more than a half presented with stable disease control at CNS after radiosurgery.

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THE INFLUENCE OF THE BREAST TUMOR BED CLIPPED IN THE HEART AND LUNG IRRADIATED VOLUME DURING THE BOOST RADIATION PLANNING

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Objetives: Adjuvant radiotherapy is a standard procedure particularly in women following breast conserving surgery (BCS). Markers may be employed for accurate localization of the boost volume during treatment planning. The implanted clips are typically stable in the tumor bed throughout the course of radiation therapy. Brazil is one of the most countries that the oncoplastic surgery is employed in breast conservative treatment, and so the importance to clip tumor bed to guide the radiation boost planning volume. The purpose of this study was to evaluate the heart and lung irradiated volume considering the presence of surgical clips in breast tumor bed during the radiation treatment planning. **Methods:** A retrospective descriptive study of 103 post-surgical patients who underwent breast-conserving treatment in early breast cancer. Statistical analysis was performed using Fisher's test, with a 95% confidence interval (CI, $p < 0.05$). It was considered the irradiated volume of lung and heart relative to 40% of prescribed dose in the boost radiation planning (V40) that was compared in patients with or without surgical clips. Using the dose-volume histogram (DVH). **Results:** This study evaluated 103 from from 2011 to 2018, and the average age was 57 years, varying from 32 to 78 years; the predominant histological type was invasive ductal carcinoma, 90%; 76% of the patients were luminal type, which 53% were Luminal A and 23% were Luminal B. Among the patients, 62% had left breast carcinoma and 38% right breast tumor. The mean heart V40 of the right breast was 2.0 cm^3 (with clip) and 0 cm^3 (without clip); and the left breast was 3.4 cm^3 (with clip) and 0.9 cm^3 (without clip). The mean lung V40 of the right breast was 60,86 cm3 (with clip) and 54.81 cm^3 (without clip); and the left breast was 49.43 cm^3 (with clip) and 43.71 cm3 (without clip). **Conclusion:** It is known that the use of the clip increases the local control. It was observed that the pulmonary and heart volume irradiated in the boost planning was higher in the group of clipped tumor bed in the tumor bed. Despite the probability of a geographic error, due to the clip use, it can lead to a better local control. In contrast, a increase of irradiated volume in normal tissue, like the heart and lung, can increase the possibility of side effects.

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PREVALENCE ANALYSIS OF DUCTAL CARCINOMA *IN SITU* OF BREAT IN WOMEN POPULATION OF GOIÁS BETWEEN 2009-2014

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Objective: Compare the prevalence of ductal carcinoma *in situ* of the breast and the prevalence between age groups in the period from 2009 to 2014 in the state of Goiás. **Methodology**: This is a descriptive study, using the Information System for Breast Cancer Control (SISMAMA). The analyzed data correspond to the reported cases of ductal carcinoma *in situ* in the female population in the years 2009 to 2014 in Goiás. **Results**: We identified 59 cases of ductal carcinoma *in situ* (DCIS) and lobular carcinoma *in situ* from September 2009 to February 2014 in the female population in Goiás. In 2009, only 2 cases of DCIS were reported, with intermediate histological grade, affecting the population between 20 and 39 years. In 2010, 16 cases were identified, 56% of intermediate grade DCIS. The age group most affected this year was between 50 and 59 years. The population most affected in 2011 was over 60 years. Furthermore, 11 cases were identified, 55% of intermediate grade DCIS. The most affected population in 2012 was between 40 and 49 years. There were a total of 10 cases this year, 50% of them high-grade DCIS. Eighteen cases were identified in 2013, and 67% of them were of intermediate grade DCIS. Two groups were equally affected: between 40 and 49 years and over 60 years. In 2014, 2 cases were identified, one of intermediate and one high-grade DCIS, at the extremes of the age groups. **Conclusion**: It is conceived that, in Goiás, DCIS is the main cause of breast cancer in the female population. About the age group, there is an alternation, with predominance over 40 years. The year with the highest number of cancer was 2013.

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ANALYSIS OF THE INCIDENCE OF PRIMARY BREAST CANCER IN RELATION TO THE TOTAL CASES IN THE FEMALE POPULATION OF THE CENTRAL-WEST SCENARIO

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Objective: Compare the incidence of primary breast cancer in relation to the total cases in the female population of the Central-West scenario and capitals, except Federal District. **Methodology:** Cancer Incidence Estimates for the biennium 2018-2019 produced by the Division of Surveillance and Situation Analysis of the Coordination of Prevention and Surveillance (Conprev) of INCA / MS were used. **Results:** According to INCA data, breast cancer will account for 19.24% of all cancer cases expected in Brazil in 2018 and 2019. For the Center-West region, this percentage is estimated to be 29%. The state in which breast cancer has a higher incidence compared to the other neoplasms is Mato Grosso do Sul (60.90%), in which the capital (Campo Grande) reaches 81.05%. Goiás presents the second highest percentage (48.68%), being in the capital Goiânia 72.17%. Finally, in Mato Grosso, the lowest value is expected (41.32%) and in its capital (Cuiabá), 59.03%. **Conclusion:** Regional disparities in access to early detection of breast cancer could explain a higher or lower incidence of breast cancer in the different states that make up the Central-West. It is known that, with the increase of the access by the population to mammography, the incidence of breast cancer tends to increase, reflecting greater access to early diagnosis. In this sense, a lower mortality rate can be expected in these regions, due to an early diagnosis.

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QUANTITATIVE EVOLUTION OF MAMMOGRAPHY IN COUNTIES OF GOIÁS BETWEEN 2010 AND 2013

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Objectives: Analysing the quantitative evolution of mammograms in counties in the state of Goiás between the years 2010 to 2013. Methodology: this is a descriptive study using data from the Information System of breast cancer (SISMAMA). The reports reviewed were mammograms of women between 40 to 69 years in Goiás, during the years 2010 to 2013. **Results**: in the year 2010, the total number of tests was of 47,542. The distribution was: Goiânia with 28,903, Annapolis with 8,194 and Catalão with 1052. Right behind, the counties with the highest number of mammograms was Rio Verde, Goiatuba, Porangatu and Jataí. In 2011, the total amount of mammography pen year increased. However, there was drop in the number of tests in the city of Goiânia and increased in other cities - mainly in Catalão and Rio Verde. In 2012, the highlight was for the countie of Goiânia which increased considerably (more than 4000 examinations). In the year 2013 there was drop in the total number of mammograms performed comparing to the previous year (51,797 mammograms in 2013 and of 54,312 in 2012). In general, it was observed an increase of 4,255 mammograms carried out during the period from 2010 to 2013. Specifically, among the cities that were included in the 10 with the highest number of tests carried out in 2010, 6 remained during the period (Goiânia, Anápolis, Catalão, Rio Verde, Jataí and Aparecida de Goiânia) and four varied, with the municipalities of Goiânia, Anápolis and Catalão remained in firsts positions respectively. **Conclusion**: the cities with more features like Goiânia, Anápolis and Catalão have remained in top positions, showing the concentration of mammographers in the most developed cities and the difficulty of access to examination by women from smaller towns. The Brazilian Society of Mastology recommends that mammography is performed from women over 40 years annually for women with no risk factors. Among women who have access to preventive mammography, the number of deaths caused by breast cancer decreases considerably due to early diagnosis. Therefore, it is important to encourage practices such as "pink october" awareness campaigns so that it is easier to carry out the examination and the decentralization of large centers in order to reach a larger number of women occurs.

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THE MASTOLOGIST PROFILE IN BRAZIL

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To analyze in a comparative way the number of mastologist doctors in Brazil who attended in the year of 2015. Data were analyzed from the study "Medical Demography in Brazil 2018" performed by the Federal Council of Medicine (CFM) and the Regional Council of Medicine of São Paulo (CREMESP), comparing them with the same study carried out in previous years (2011, 2013, 2015). In 2017, in Brazil, 0.6% of medical specialists were mastologists, totaling 2,219 professionals corresponding to 1.07 specialists per hundred thousand inhabitants. The mean age of the mastologists was 45.5 years and 50.9% of them are men. Among the mastologists, acordding to the Brazilian macro regions, 52.7% work in the Southeast, 20.9% in the Northeast, 13.8% in the South, 8.5% in the Midwest and 4.1% in the North. In addition to mastologists, 1,710 are obstetrician gynecologists, 320 are general surgeons, 90 are clinical oncologists and 78 oncology surgeons. From the data presented, we can observe the expansion of the specialty in Brazil. In 2011, the number of mastologists in the country was 669, corresponding to 0.33% of medical specialists at the time. In six years, this percentage gradually increased to 0.6% (2,219 professionals), from 0.75 mastologists per 100 thousand inhabitants in 2013 to 1.07 in 2017. The mean age during the analyzed periods was oscillating 44, 3 years in 2011, 45.41 in 2013, 44.8 in 2015 while that of the percentage by sex that went from 60.4% of homes in 2013 to 50.9% in 2017, a trend that accompanies the feminization of medicine in Brazil. It is also noticeable the heterogeneous distribution of this specialty in the Brazilian regions, with more than half of the mastologists (52.7%) concentrating only in the southeast region. The main access route for mastology continues to be obstetrical gynecology (choice of 77% of mastologists working in 2017). In addition, a significant number of mastologists are also specialists in clinical or surgical oncology, both currently (168 professionals) and in the last two studies (117 in 2013 and 146 in 2015).

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NARRATIVE REVIEW ON THE CONSUMPTION OF SOY AND DERIVATIVES RELATED TO THE RISK OF BREAST CANCER

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Objective: The objective of this work is to know the studies developed about the corelation of soy food intake and its relation with the risk of breast cancer, synthesizing the most recent recommendations. **Methodology:** In the preparation of this narrative review some search terms were used: Breast cancer, soy food intake and risk. These terms were introduced in Brazilian and international bibliographic databases, such as SciELO - Scientific Library Online. In addition, articles were searched in international journals such as: The American Journal of Clinical Nutrition and British Journal of Cancer. **Results:** In the analyzed articles, what is observed is an inverse relationship between the consumption of soy and its derivatives and the risk of breast cancer. The consumption of soy and its derivatives, in a moderate amount, decreases the risk of breast cancer and, also, the percentage of recurrence of the disease, once diagnosed. The effect of isoflavanes as an antiestrogen and the anticancer effects of multiple soy components such as DNA topoisomerase inhibition, immunoinflammatory modulation and angiogenesis blockers have been pointed out in most studies as responsible for protective action. Some studies in Asian women have come to estimate 15% percent reduction in the risk of developing breast cancer, every 10 mg of isoflavana ingested per day. In addition, studies also showed that isoflavones had no interaction with tamoxifen in patients taking this therapy. **Conclusion:** This review allowed us to analyze the correlation between soy consumption and its derivatives with breast cancer risk and mortality, suggesting that moderate soy food intake is safe and potentially beneficial for women with breast cancer. This review can highlight the subject for future works.

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DOUBLE MUTATION CARRIER IN BRCA2 AND MUTYH GENES: A CASE REPORT IN A YOUNG BREAST CANCER PATIENT

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Objectives: To describe a case of a young female patient (32 years old) diagnosed with breast cancer and submitted to a genetic testing with an unusual result. **Case description**: The tumor was an invasive ductal carcinoma, estrogen and progesterone receptors positive and HER2 negative. The family history revealed a paternal aunt with bilateral breast cancer at about 60 years old, a paternal grand uncle with a central nervous system cancer, and another paternal granduncle with leukemia, who had three daughters with breast cancer at young age. During the treatment period, the father of the patient was also diagnosed with breast cancer. The genetic test revealed a concomitant double pathogenic variant, namely c.9382C>T (p.Arg3128*) in *BRCA2* and c.1187G>A (p.Gly396Asp) in the *MUTYH* gene. **Discussion**: A pathogenic mutation in BRCA2 gene is associated to increased risk of developing breast and ovary cancer in young age, compared to general population. The risk of pancreatic cancer and melanoma are also increased by this mutation. A pathogenic mutation in the monoallelic MUTYH gene seems to slightly increase the risk of developing colorectal cancer, compared to average woman. Although the cancer risk in individuals who carry multiple pathogenic variants has not been established for combined MUTYH and BRCA2 pathogenic variants, the identification of multiple pathogenic variants does allow for screening for cancers associated with both syndromes and has implications for cancer risk for family members. More information is needed on the frequency of multiple pathogenic variants, as well as the phenotypic spectrum when multiple pathogenic variants are present.