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MESSAGE FROM THE ORGANIZING COMMITTEE

Welcome to the Brazilian Breast Cancer Symposium 2019.

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 a 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 Brazilian Breast Cancer Symposium (BBCS). We believe that this change will bring 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 for new ideas, and especially new solutions related to the diagnosis, treatment and rehabilitation of breast cancer.

To give voice to the researchers and their work, this supplementary edition of Mastology was conceived in conjunction with the Sociedade Brasileira de Mastologia (SBM), in which each abstract receives its Digital Object Identification (DOI), allowing it to be accessed at any time and that above all, it may be cited, further expanding the scientific dissemination of researchers present in Pirenópolis.

We hope you enjoy. Good reading!

Ruffo Freitas-Junior
Rosemar Macedo Sousa Rahal
Régis Resende Paulinelli
Luis Fernando Pádua Oliveira

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REDUCTION IN OVERALL SURVIVAL OF WOMEN WITH METASTATIC BREAST CANCER IN LOW- AND MIDDLE-INCOME COUNTRIES: A REFLECTION OF LACK OF ACCESS?

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Objective: The objective of the present study was to analyse the overall survival of women diagnosed with metastatic breast cancer (MBC) in the city of Goiânia, Brazil. **Methods:** Cases were identified in the Population-Based Cancer Registry of Goiânia, Brazil, from 1995 to 2011. All women with metastatic disease were included in the study. Clinical and demographic characteristics of the sample were analysed, as well as information related to the diagnosis and treatment of the disease. The variables that are not systematically recorded were collected directly from the medical records. Overall survival was divided into analyses of 60 and 120 months of follow-up. **Results:** Two hundred and seventy-seven women were included, whose mean age at diagnosis was 54.7 (± 14.5) years. Overall survival at 60 and 120 months was 19,9 and 7,3%, respectively. In the univariate analysis, the following variables were significant: staging (T); histological type; histological grade; oestrogen receptor; progesterone receptor; tumour phenotype; type of health care; performing breast surgery; initial site of metastasis; and surgery for resection of metastasis. Among patients with hormone receptor positive (HR+) tumours, there was no difference according to the treatment received in the first line (chemotherapy versus endocrine therapy). In the 10-year multivariate analysis, adjusted for the expression of hormone receptors, significant values were observed for the variables tumour grade ($p=0.02$), financing source ($p=0.02$), presence of breast surgery (0.001), and initial site of metastasis ($p=0.03$). **Conclusion:** This is the first population-based study addressing MBC in Brazil. Overall survival in this population was about 50% lower than in developed countries. Access to private health care and surgery for resection of the primary tumour proved to be significant in predicting overall survival in five years.

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LEAN MASS IS INVERSELY ASSOCIATED WITH BREAST CANCER, WHILE ABDOMINAL ADIPOSITY AND INSULIN RESISTANCE INCREASES THE CHANCES OF DEVELOPING THE CANCER

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Objective: To investigate whether breast cancer is associated with body composition, insulin resistance, and lipid profile. **Methodology:** This was a case-control study with 175 women recently diagnosed with breast cancer and 299 controls. Body composition was assessed by dual-energy X-ray absorptiometry. Waist circumference (WC) was measured as an indirect cardiometabolic risk factor (>80 cm). Total cholesterol, high-density lipoprotein (HDL), low-density lipoprotein (LDL), very-low-density lipoprotein (VLDL), triglycerides, fasting blood glucose, glycated hemoglobin and insulin resistance (HOMA-IR<1.65) were assessed in plasma. Logistic regression was adjusted for body mass index (BMI) and age to quantify the association between breast cancer risk and body composition, insulin resistance, dyslipidemias, and abdominal adiposity. **Results:** The mean age of patients was 52±11 years. The case group had low lean mass compared to controls (35.04±5.09 vs 36.44±5.95 kg, p=0.02), even showing the same BMI (27.21±5.27; vs 27.58±5.17, p=0.26). Women diagnosed with breast cancer had high concentrations of triglycerides (134.07±67.57 vs 123.48±73.75; p=0.03). The logistic regression showed that breast cancer was inversely associated with lean mass and low fat mass (OR 0.93; 95%CI 0.89–0.97 and OR 0.26; 95%CI 0.13–0.53, respectively). Insulin resistance (OR 2.33; 95%CI 1.35–4.04) and abdominal obesity (OR 4.18; 95%CI 1.83–9.57) was positively associated with breast cancer. **Conclusions:** Lean mass was inversely associated with breast cancer, while abdominal adiposity and insulin resistance increases the chances of developing the cancer.

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ANALYSIS OF CLINICAL OUTCOMES BASED ON MOLECULAR SUBTYPES IN PATIENTS WITH BREAST CANCER THAT RECEIVED NEOADJUVANT CHEMOTHERAPY

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Objectives: To evaluate the survival outcomes based on molecular subtypes of patients with breast cancer that received neoadjuvant chemotherapy (NAC). **Methodology:** We performed a retrospective analysis of all non-metastatic breast cancer patients treated between 2008 and 2014 at two institutions who had received NAC followed by surgery and post-operative radiation therapy. Patients were divided into four groups based on the tumor molecular subtype: luminal (estrogen receptor [ER] / progesterone receptor [PR] positive, human epithelial growth factor receptor-2 [HER2] negative), HER2 (HER2 positive), and triple negative (TNBC; HER2, ER and PR negative). Multivariate analyses for disease-free survival (DFS) and overall survival (OS) were also performed adjusting for unbalanced variables: pathologic complete response (pCR), histologic type and grade tumor. **Results:** A total of 653 women were included. Most (589; 91.1%) of the patients had locally advanced disease (clinical stage IIB to IIIC). Patients were distributed as following (N; %): luminal (300; 45.9%), HER2 (173; 26.5%), TNBC (180; 27.6%). The groups differ regarding pathologic complete response rate (pCR), histologic type and grade, where pCR were more frequent in HER2 (64; 37.0%) and TNBC (52; 28.9%) vs. Luminal (18; 6%). The median follow-up time for surviving patients was 33 months. The disease-free survival (DFS) and overall survival (OS) rates for all patients at 3 years were 71 and 86%, respectively. The DFS and OS rates for all patients at 3 years were 71 and 86%, respectively. Patients with TNBC had worse DFS and OS rates at 3 years: (3year-DFS: 72, 76, and 64%; 3year-OS: 88, 88 and 78%, for Luminal, HER2 and TNBC, respectively). Comparing to TNBC, Luminal had better DFS (HR 0.67; 95%CI 0.46–0.97) and OS (HR 0.54; 95%CI 0.32–0.90), in multivariate analysis, while no statically difference was seen between HER2 vs. TNBC (DFS HR 0.73; 95%CI 0.49–1.10; OS HR 0.63; 95%CI 0.36–1.09). **Conclusion:** In locally advanced breast cancer patients who underwent NAC, survival rates were different based on the molecular subtype, with TNBC having the poorest prognosis.

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TUMOR MUTATIONAL BURDEN (TMB) IS A POTENTIAL PREDICTOR OF RESPONSE TO IMMUNE CHECKPOINT INHIBITORS (ICI) IN METASTATIC TRIPLE-NEGATIVE BREAST CANCER (MTNBC)

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Objectives: This study aimed to explore if TMB correlates with efficacy of PD-1/PD-L1 inhibition in patients (pts) with mTNBC. **Methodology:** Demographic, treatment response, and long-term outcome data were collected on patients with mTNBC treated at Dana-Farber Cancer Institute (DFCI) under several clinical trials incorporating PD-1/PD-L1 inhibitors, given as monotherapy or combined with chemotherapy (CT). Pts included in this analysis had available results of targeted exon sequencing performed using Oncopanel, our institutional gene sequencing panel, on archival tumor tissue. TMB was calculated by determining the number of non-synonymous somatic mutations that occur per megabase of exonic sequence data across all genes on the panel. High TMB was defined as 10 mutations/megabase. TMB and gene alterations were correlated with objective response rate (ORR) per RECIST 1.1, progression-free (PFS) and overall survival (OS). **Results:** A total of 48 pts with mTNBC were included in this analysis. At baseline, the median age was 55.9 years (31.8–75.9), 60% had ECOG 0 and 40% had ECOG 1, 72% had visceral metastasis, and 46% had received >1 prior lines of systemic therapy in the metastatic setting. While 26% of pts received monotherapy [pembrolizumab (n=7, NCT02447003); atezolizumab (n=6; NCT01375842)], 74% received combination with CT [pembrolizumab plus eribulin (n=31; NCT02513472); atezolizumab plus nab-paclitaxel (n=6; NCT01633970)]. Median follow-up was 14 months (1–40). The median TMB was 6.6 mut/Mb (1.2–50.8), and 23% of pts had a high TMB. While high TMB was not associated with higher ORR (p=0.56), it was associated with better median PFS (16.5 vs 2.4 months; p=0.017), and better median OS (not reached vs 13.5 months; p=0.026). TMB remained significantly associated with PFS in the multivariable model. **Conclusion:** High TMB may impact benefit from PD-1/PD-L1 inhibitors largely administered with chemotherapy in mTNBC. This observation warrants prospective validation.

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ONCOTYPE DX[®] IN THE SISTEMA ÚNICO DE SAÚDE DO BRASIL (SUS): RESULT OF 125 CASES

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Objectives: OncotypeDx[®] is a diagnostic test that uses the qRT-PCR (Reverse Transcript polymerase chain reaction quantitative real time) technique in the evaluation of 21 genes and the result is given as Recurrence Score (RS) ranging from 0 to 100. The RS was validated in data from the NSABP B-14 study which examined the benefit of adjuvant tamoxifen in patients with hormone receptor positive and lymph node-negative breast cancer. In patients classified as low risk by RS (RS <18), only 7% relapsed despite adjuvant tamoxifen compared to high risk patients (RS > 31), of whom 31% relapsed. The TailorX study, updated in 2018, included 9,719 HER2 negative hormone receptor patients with tumors ranging from 1.1 to 5.0 cm and was designed to evaluate the benefit of chemotherapy in patients considered to be at intermediate risk (RS between 11 and 25). Thus, 6,711 patients in the intermediate group were randomized to receive chemotherapy followed by hormone therapy or only hormone therapy. After data analysis (follow-up of 96 months for overall survival) it was concluded that chemotherapy had no benefit in patients older than 50 years old up to RS 25, but those under 50 years could have an additional benefit depending on the value of the RS (6.5% benefit in score from 21 to 25 and 1.6% from 16 to 20). To evaluate the change of conduct after the test result (OncotypeDx[®]) in SUS. **Methodology:** 125 patients from 08/08/2018 to 03/25/2019, post-surgery with T1 and T2 tumors, with up to 3 axillary lymph nodes involved, luminal (HER 2 negative and ER positive), candidates for adjuvant systemic therapy. Before the test, it was determined which systemic therapy would be prescribed, and after the result, that was actually performed. **Results:** The mean age of the patients was 57.4 years (34–78), 41 had axillary lymph nodes involved and 76% were postmenopausal. Before the test, 122 of the 125 patients had, by clinical criteria, indication of chemotherapy. After the test was performed, there was a modification in CT indication in 68.8% (84 patients that would receive CT by clinical indications did not receive it and received only HT, and 2 patients that were not going to receive CT had to receive it because of the recurrence score). Using the criteria defined in the MINDACT study for the classification between high and low clinical risk, we observed that 48.8% of our patients were at high risk and only 36% of them (22/61) received chemotherapy. Regarding low-risk patients according to clinical criteria, 21.9% underwent chemotherapy (19/64). **Conclusion:** Recruitment remains active and, initially, we have already evaluated the advantage of applying the test in reducing the indication of chemotherapy with benefits to both the patient and the health system. Clinical criteria have not been able to adequately predict which patients benefit from chemotherapy.

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FUNCTIONAL AND PROGNOSTIC ANALYSIS OF AGR2 (ANTERIOR GRADIENT PROTEIN 2) IN BREAST CANCER USING IN-SILIC DATA

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Objective: To characterize the expression profile and the prognostic value of AGR2 in breast cancer and the possible genetic and epigenetic mechanisms involved. **Methodology:** The METHHC platform was used to evaluate methylation using the TCGA (The Cancer Genome Atlas) data. The gene expression data were extracted from the TCGA and METABRIC databases, which were accessed through cBioPortal. The KMPlotter software was implemented to analyze the overall survival time (OS) and disease-free survival (SLD). **Results:** The methylation of AGR2 was reduced in the tumor compared to the normal samples ($p < 0.0001$). Correlation in tumor samples ($R = -0.5864$; $p < 0.0001$) and normal ($R = -0.8333$; $p < 0.0001$) confirmed the mechanism between methylation and gene expression. Increased AGR2 expression was associated with positivity of estrogen receptor ($p \leq 0.0001$) and progesterone ($p \leq 0.0001$), HER2 negativity ($p \leq 0.05$) and the post menopause ($p = 0.0001$) in the data of METABRIC and TCGA. AGR2 expression was reduced in the basal and claudin low subtypes, and increased in luminal subtypes A and B, HER2 and the normal-like subtype, with $p \leq 0.0001$ in the METABRIC data. Low AGR2 expression was associated with increased histological grade ($p \leq 0.0001$) and cancer staging ($p = 0.0476$). Reduction of AGR2 expression conferred worse SG in the luminal subtype A ($p = 0.0027$) and the worse SLD in the basal subtype ($p = 0.00027$). Meanwhile, the high expression of AGR2 conferred worse SG ($p = 0.018$) and worse SLD ($p = 0.0018$) in patients of the B luminal subtype. **Conclusion:** According to our findings, AGR2 is hypomethylated in breast cancer. Its modulation is associated with progression of breast cancer and is related to established markers. In addition, AGR2 gene expression analysis appears to be an important biomarker in the identification of tumor subtypes and has prognostic value.

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COMPARATIVE EFFECTIVENESS OF BREAST CONSERVING SURGERY VERSUS MASTECTOMY ON SURVIVAL IN BREAST CANCER PATIENTS THAT RECEIVED NEOADJUVANT CHEMOTHERAPY AND POST-OPERATIVE RADIATION THERAPY

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Objectives: The aim of this study was to determine whether there were differences in survival outcomes of matched breast cancer patients undergoing breast-conserving surgery (BCS) versus mastectomy that received neoadjuvant chemotherapy (NAC). **Methodology:** A retrospective cohort of patients with stage I-III breast cancer treated between 2008 and 2014 at two institutions who had received NAC followed by surgery and post-operative radiation therapy was identified. Kaplan-Meier and multivariate Cox proportional hazards models were used to examine disease-free survival (DFS) and overall survival (OS) rates by surgery type. **Results:** Of 652 patients, 162 (24.9%) underwent BCS and 490 (75.1%) underwent mastectomy /adenomastectomy. Most of the patients (n=589, 91.1%) had locally advanced disease (clinical stage IIB to IIIC) with a mean age of 50 years. In regards of surgery type, patients with stage III disease underwent more mastectomy than BCS (n=383, 79.0% mastectomy versus n=81, 50.3% BCS; $p<0.001$). The DFS and OS rates for all patients at 3 years were 81.5 and 67.5% ($p=0.001$); 88.9 and 83.9% ($p=0.174$) for BCS and mastectomy groups, respectively. Despite these differences, in the multivariate analyzed adjusted by clinical stage and pathologic complete response, there were no statistical differences in DFS (mastectomy versus BCS HR 1.44; 95%CI 0.95–2.17) and OS (mastectomy versus BCS HR 1.03; 95%CI 0.60–1.75) concerning the surgery type. **Conclusion:** In breast cancer patients who underwent NAC and post-operative radiation therapy, BCS and mastectomy are effective with similar survival outcomes regardless of surgery type.

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INFLUENCE OF THE SURGICAL CLIP ON BREAST, HEART AND LUNG VOLUMES OF PATIENTS SUBMITTED TO BOOST DURING THE PLANNING OF BREAST CANCER RADIOTHERAPY, ACCORDING TO ONCOPLASTIC SURGERY

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Objectives: To evaluate the breast, heart and lung irradiated volumes considering the presence of clip implantation in breast tumor bed boost during radiotherapy, according to the use of oncoplastic surgery. **Methodology:** Women submitted to boost radiotherapy tumor bed after breast conservative surgery for breast cancer patients between 01/2011-04/2018. Statistical analysis using Student T Test (95%CI; $p < 0.05$). It was considered volumes of lung and heart relative to 40% of prescribed dose in the boost radiation planning (V40Lung) (V40Heart) and 100% in the breast and boost volume (V100Breast) (V100Boost), which were compared by oncoplastic techniques and surgical clips using the dose-volume histogram (DVH) in 3D dose distributions radiotherapy. **Results:** 149 patients, of whom 71 had clip (48%). Of the 69 patients submitted to oncoplasty, 38 had clip in the surgical bed (55%). For the whole group, when the patient was clipped there was a difference between the mean volume V100Boost=110 cm³ (PD±37) and without clip V100Boost=213 cm³ (PD±208) $p < 0.001$, but there was no difference for V100Breast=282 cm³ with clip (PD±141) and without clip V100Breast=400 cm³ (PD±188) $p = 0.085$, nor for V40Lung=57 cm³ (PD±41) with clip and 43 cm³ (PD±47) $p = 0.72$ and V40Heart=2.40 cm³ (PD±6) with clip and 2.78 cm³ (PD±14) $p = 0.59$. For those who underwent oncoplasty, there was no difference between the means of the volumes analyzed according to the presence of the clip. However, for those who did not undergo oncoplasty only the V40Lung was not significant for the presence of the clip ($p = 0.28$), but were significant for V100Boost=111 cm³ (PD±35) with clip and 262 cm³ (PD±274) without clip ($p < 0.001$), V100Breast=306 cm³ (PD±147) with clip and 423 cm³ (PD±218) without clip ($p = 0.002$) and V40Heart=2.02 cm³ (PD±4) with clip and 0.62 cm³ (PD±2) without clip ($p = 0.009$). The most commonly used oncoplastic techniques were reduction mammoplasty in 23 patients (33%) and round block in 8 (12%). **Conclusion:** The presence of the clip significantly reduced the irradiated boost volume. When controlled by oncoplasty, there was no difference between groups. For those who did not undergo oncoplasty, the presence of the clip made it possible to reduce the irradiated volume that received 100% of the prescribed dose of the whole breast and the boost area, but increased the cardiac volume that received 40% of the prescribed dose during the radiotherapy boost planning.

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ONCOPLASTIC SURGERY IN BREAST-CONSERVATIVE TREATMENT: PATIENT PROFILE AND IMPACT ON QUALITY OF LIFE

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Background: Breast conserving-surgery (BCS) patients have better quality of life (QL) than mastectomy without reconstruction. Oncoplastic surgery (OS) is becoming increasingly common, but few studies have evaluated the impact on QL in patients submitted BCS with OS. **Objective:** Evaluate the quality of life in patients submitted to BCS with OS. **Methods:** Ethics Committee approval 782/2014. A prospective, cross-sectional, controlled study that was conducted with 300 women who were submitted to BCS. QL was assessed through the EORTC QLQ-30, EORTC QLQ-BR23, and BCTOS questionnaires. We evaluated the characteristics of patients who underwent BCS with OS and QL. Cosmesis was evaluated by BCCT.core. In the comparison of categorical variables, the chi-square test was used, whereas continuous variables were assessed using the Mann-Whitney test. **Results:** A total of 300 patients underwent CBT, 72 underwent breast OS, where 37 underwent bilateral surgery. Patients who were submitted to OS were younger ($p=0.004$), had a higher level of education ($p=0.01$), a smaller time interval since the end of treatment ($p=0.02$), more advanced TNM clinical stage ($p = 0.05$), tumours with greater dimensions ($p=0.003$), were more likely to have T-TNM tumours ($p=0.02$) and were more likely to receive neoadjuvant chemotherapy ($p=0.05$). Evaluating QL questionnaires no difference was observed in the groups. Breast symmetry was not associated with higher patient satisfaction ($p=0.55$). **Conclusions:** A selection bias may have occurred in selecting patients for OS. In our patients, the simple use of OS, whether it was associated with symmetrisation or not, was not associated with improvement in QL.

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COSMETIC OUTCOMES IN BREAST ONCOPLASTY: RETROSPECTIVE COHORT TO COMPARE OBJECTIVE AND SUBJECTIVE METHODS OF EVALUATION

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Objective: Different subjective and objective methods are available for the evaluation of the cosmetic outcome in breast reconstruction. The objective was to compare the correlation among different objective methods (BCCT and BAT), to the subjective medical impression (Harvard scale), and the subjective patient's opinion (BREAST Q). **Methods:** A total of 509 breast cancer patients were included in a multicentric retrospective cohort, submitted to breast reconstruction. After signing the informed consent, patients answered the BREAST Q questionnaire, information was collected from their charts and photos were taken to evaluate the results. The photos were analyzed in the BAT and BCCT.core programs, and by 3 mastologists, through the Harvard scale. Data were collected between January/2015 – February/2019. Statistical analysis and the Pearson correlation coefficient were calculated using the SPSS software. **Results:** The mean age of the patients was 55.8 years. Overall, 273 women (53.6%) had been submitted to partial breast reconstruction and 236 (46.4%) to total breast reconstruction. There was one single procedure in 321 (63.1%) patients. The mean follow-up time was 66.3±55.0 months. Results were good or excellent in 338 (66.4%) cases in the surgeon's opinion, in 368 (72.3%) patients using BCCT, and in 447 (87.8%) using BAT (cutoff of 7). According to BREASTQ, the mean scores of satisfaction with breasts was 71.1 (±17.9); with results, 87.1 (±17.3); physical well-being, 66.7 (±14.3); psychosocial well-being, 78.7 (±18.7), and 67.4 (±22.7) for the sexual well-being. The correlations between the BAT, the BCCT.core software programs and Harvard scale were moderate to strong, without superiority among them. There was a significant weak correlation of the two software programs, and the Harvard scale with some of the BREASTQ domains. **Conclusion:** The correlations among the two software and the surgeons' opinions are similarly moderate. They have an equivalent weak correlation to some of the BREASTQ domains.

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REGIONAL DIFERENCES OF BREAST CANCER RECONSTRUCTIVE SURGERIES AMONG BRAZIL'S PUBLIC HEALTHCARE USERS: A 10 YEAR STUDY

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Objective: Analyze the temporal evolution of the breast reconstructions made on breast cancer patients treated by the Brazilian National Health System (*Sistema Único de Saúde* – SUS) between 2008 and 2017, as well as evaluate the differences of surgical treatment in Brazil's regions. **Methodology:** Descriptive time-series study of breast cancer reconstructions, according to the population-based database on hospital information (DATASUS/SIH), all data of breast reconstruction, with prosthesis or myocutaneous flaps. The absolute number of procedures was analyzed with Poisson regression, using Jointpoint Regression program and for the Annual Percentual Change (APC) was acquired for the trend, with a confidence interval of 95% and statistical significance when $p < 0.05$. A linearity test was used to assess the differences among Brazil's regions. **Results:** During the period studied, nearly 254,000 breast cancer surgeries were performed, with 9,838 myocutaneous flaps reconstructions and 14,222 with silicone prosthesis. We found an increasing trend of myocutaneous flap in the Southeast (APC 12,34), Midwest (APC 26,56), Northeast (APC 26,42), and South from 2012-2017 (APC 32,44) and stabilization in the North. Regarding silicone prosthesis reconstruction, we found an increasing trend in the North (APC 20,18) and Southeast from 2008–2014 (APC 5,08), and Midwest (APC 4,88), with stabilization in the Southeast during 2014–2017, Northeast and South regions. **Conclusions:** During the period analyzed, we found an increase of breast reconstructive surgeries in Brazil and in its regions. However, there were some differences among those regions, not only at the total number of surgeries but also as the type of surgery performed.

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ONCOPLASTIC MAMMAPLASTY WITH GEOMETRIC COMPENSATION – OUTCOMES AND FOLLOW-UP OF A MULTICENTRIC PROSPECTIVE COHORT

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Objective: To evaluate the results and follow-up of patients submitted to a technique of oncoplastic mammoplasty, referred to as geometric compensation, which is suitable for tumors close to the skin in areas not included in the classic preoperative drawings for mammoplasty. **Materials and Methods:** Seventy-three patients with malignant tumors, from 5 different centers, and two countries were included. Preoperative markings followed the “Wise-pattern” technique. The resection of affected skin was geometrically compensated with another area of preserved skin. **Results:** The mean age of the patients was 53.50±11.74 years. Mean pathological tumor size was 30.42±21.98 mm. There were 20 (30.77%) locally advanced and 15 (20.55%) multicentric tumors. Twenty-two (34,38%) patients were submitted to neoadjuvant chemotherapy. Adjuvant chemo, endocrine and radiotherapy were indicated according to the necessity. Ptosis was corrected in all cases. The aesthetic result was rated excellent in 22 cases (32.35%), good in 37 (54.41%), fair in 8 (11.76%), and poor in 1 (1.47%) case. Positive margins were seen in 2 (2.74%) cases. The technique allowed a one-stage partial breast reconstruction in 64 (87.67%) cases. The complications were: 11 (15.07%) dehiscences, 9 (12.33%) fat necrosis, 5 (6.85%) skin necrosis, 5 (6.85%) seromas, 7 (9.59%) enlarged scars and 2 (2.74%) infections. There were 3 (4.29%) local recurrences, two (2.86%) bone metastasis, and 3 (4.35%) contralateral cancers. No deaths were observed within a mean follow-up time of 35.33±28.21 months. **Conclusions:** The technique allowed breast conservation in situations requiring large resection of skin in difficult positions, with a high rate of free margins, correction of ptosis, satisfactory symmetry and few complications.

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LIRAGLUTIDE AS A NOVEL DNA DEMETHYLATING AGENT AND ITS POTENTIAL USE IN THE ADJUVANT TREATMENT OF HIGHLY INVASIVE BREAST CANCER

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Objective: The aim of this study was to evaluate the effect of the GLP-1 analogue Liraglutide, currently utilized in the treatment of diabetes mellitus, as a new DNA demethylating agent in breast cancer. **Methods:** the breast cancer cell lines MCF7, MDA-MB-231 and MDA-MB-436 were treated with Liraglutide and submitted to methylation pattern analysis, gene expression and protein translation to evaluate the treatment response over the estrogen receptor (*ESR1*) and the cell adhesion (*CDH1*) and *ADAM33* genes. *In vivo*, Ehrlich mammary adenocarcinoma tumor model was induced in mice that were subsequently treated with Liraglutide, Paclitaxel or Liraglutide and a half dose of Paclitaxel. The relative tumor volume was measured and compared with DNA methylation and protein analysis. **Results:** Our results revealed that Liraglutide reduced cell growth and migration in breast tumor cell lines, including triple negative breast cancer (TNBC), the most aggressive type. Meanwhile, we show that the treatment with Liraglutide induced gene and protein expression of Estrogen Receptor in previously triple-negative cells, adhesion protein, such as E-cadherin and ADAM33, a recently identified molecular marker for TNBC. The DNA demethylation, and consequential increase in gene expression, occurs in a manner similar to decitabine, a known DNA-demethylating agent used in the treatment of hematological cancer. *In vivo* Liraglutide treatment significantly decreased tumor volume in animal models. The combined treatment of Liraglutide and Paclitaxel allowed a significant dose reduction of the chemotherapy without loss of efficiency. The *CDH1* and *ADAM33* genes and proteins were expressed highlighting the demethylation potential *in vivo*. **Conclusion:** This is the first report that displays the Liraglutide's potential as a DNA-demethylating agent and to propose it as an adjuvant agent in the treatment of breast cancer, including TNBC.

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FACTORS ASSOCIATED WITH RETURN TO WORK OF BREAST CANCER SURVIVORS TREATED AT THE PUBLIC CANCER HOSPITAL IN BRAZIL

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Objective: Evaluate the impact of return to work in breast cancer patients treated at a public Brazilian Oncology Hospital. **Method:** Ethics Committee approval: 1180/2016. A prospective, cross-sectional, controlled study was conducted with 304 women. Criteria of inclusion was working during 2012–2014, clinical stage 0 to III, age 25–60 years old. Standardized clinical records evaluated all patients. Patients were randomized to a 1:1 to perform physical therapy examination, which was based on shoulder goniometry, hand dynamometry, and limb volume. We evaluated factors related to return to work (patients perspective, disease and work) and quality of life (EORTC QLQ-C30, EORTC BR-23), associated conditions (SPADI, HADS). 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 and quality of life evaluation. 54.0% returned to work after treatment. Evaluating the 304 patients in the multivariate model, there were factors many factor associated with the non-return to work: pre-treatment conditions (age, schooling and clinical staging), treatment (axillary surgery), work (type of work, social security benefits, moment of remoteness, dominant member affected) and self-referred sequels (loss of strength). There were no difference in the groups submitted to the complete evaluation and physical/quality of life evaluation. Evaluating multivariate analysis in 163 patients, the facts that predictive the non-return to work was related to age, schooling, moment of remoteness, measured sequel shoulder flexion, and sequel hand strength. 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:** Multiple factor influenced the non-return to work. Return to work improved patients' quality of life.

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RECIST EVALUATION OF THE USE OF SALVAGE 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. Nearly one third of LABC are resistant to multimodal neoadjuvant treatment. As an alternative to downsize tumor, salvage radiotherapy has been reported as an option. The aim of this study is to verify the use of radiotherapy in the treatment of LABC, to evaluate tumor response by using the Response Evaluation Criteria In Solid Tumors (RECIST) and estimate overall survival. **Methods:** It is a prospective study including 27 patients LABC that were submitted to salvage radiotherapy between January 2017 and July 2018 at a public hospital; tumor reduction was analyzed by RECIST method. Statistical analysis of tumor response was controlled by immunohistochemistry using Pearson's correlation. The percentage of tumor reduction at the end of radiotherapy was analyzed by Student's T-Test. Overall survival after diagnosis and after Radiotherapy treatment was also analyzed by Kaplan-Meier Curves. All patients were followed by photograph analysis, after signing the informed consent form (TCLE). **Results:** During a year and a half, 27 patients were included, with a median age of 55 years old. Mean tumor size was 14 (3–25) cm. The most prevalent immunohistochemistry was luminal tumors (51%), then triple negative (30%) and Her2 (19%). Radiation dose ranged from 40–70Gy; At the end of RT, mean tumor response was 53% (95%CI 41–64; $p < 0.001$), and after 104 days post RT, mean tumor response was 62% (95%CI 49–75; $p < 0.001$). By RECIST analysis, there was 16% complete response, 64% partial response, 16% stable disease and 4% progression after RT return. The overall survival (OS) within two years of diagnosis was 56 and 90% for luminal. After a year of radiotherapy, overall survival was 85%, rather than 50% in triple negative group ($p = 0,06$). **Conclusion:** Radiotherapy should be considered as a form of approach for locoregional control, as an effective treatment to downsize breast cancer tumors with low or absent response to neoadjuvant chemotherapy.

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INFLUENCE OF LIFESTYLE FACTORS ON BREAST CANCER RISK: A CASE-CONTROL STUDY WITH A REPRESENTATIVE SAMPLE OF THE BRAZILIAN POPULATION

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Objective: To evaluate the influence of lifestyle factors on the chances of developing breast cancer in Brazilian women.

Methodology: A case-control study was conducted with 542 women, 197 diagnosed with breast cancer and 345 healthy controls. All analyzes were adjusted for age and BMI. The International Physical Activity Questionnaire – Short form was used to estimate the level of physical activity. A standardized questionnaire was used in order to evaluate whether the volunteers were following dietary recommendations, smoking, and alcohol-related habits. We also collected anthropometric variables: weight (kg), height (m), and waist circumference (cm). A multivariate logistic regression model was performed to estimate the odds ratios (OR) and 95% confidence intervals (CI) of the relative risk of breast cancer with lifestyle factors. **Results:** The mean age of the patients was 52±11 years. Not following dietary recommendation (OR 1.78, 95%CI 1.12–2.89), smoking habit (OR 1.68, 95%CI 1.12–2.46), alcoholic habit (OR 2.16, 95%CI 1.48–3.16), and sedentary lifestyle (OR 1.89; 95%CI 1.129–2.76) were associated with a greater chance of developing breast cancer, regardless of age and BMI.

Conclusions: The sedentary lifestyle, not following dietary recommendations, smoking, and consumption of alcoholic beverages increase the risk of developing breast cancer.

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TRENDS IN THE INCIDENCE OF BREAST CANCER FOLLOWING THE RADIOLOGICAL ACCIDENT IN GOIÂNIA: A 25-YEAR ANALYSIS

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Background: The largest radiological accident to occur in any urban area happened in a Brazilian state capital city in 1987 to the detriment of the population and the environment. One major concern regarding deleterious effects in the population was a possible increase in breast cancer incidence rates, since the literature shows that exposure of an individual to ionizing radiation is one of the risk factors for cancer. This study analyzed trends in the incidence of breast cancer over the 25-year period following the radiological accident. **Methods:** This ecological, population-based study was conducted to determine the incidence of breast cancer in female residents of Goiânia, Goiás, Brazil, between 1988 and 2012. The data were collected from the Goiânia population-based cancer registry. Crude and age-standardized incidence rates were calculated. The Joinpoint software program was used to calculate annual percent changes (APC) in the incidence of breast cancer. **Results:** Overall, 7,365 new cases of breast cancer were identified, with an annual crude incidence rate of 23.09/100,000 women in 1988 and of 71.65/100,000 women in 2012. The age-standardized incidence rate was 35.63/100,000 women in 1988 and 65.63/100,000 women in 2012. Analysis of the APC showed a significant annual increase of 4.8% in the incidence between 1988 and 2005 ($p < 0.0001$) followed by stabilization in 2005–2012, with an APC of -3.5% ($p = 0.1$). **Conclusion:** There was an increase in the incidence of breast cancer in the female residents of Goiânia, Goiás in the first 17 years of evaluation (1988–2004) followed by a period of stabilization until 2012.

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AXILLARY SURGICAL APPROACH IN METASTATIC BREAST CANCER PATIENTS: A SYSTEMATIC REVIEW AND META-ANALYSIS

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Objective: To evaluate the benefit of an axillary surgical approach on overall survival in patients with metastatic breast cancer. **Summary background data:** Metastatic breast cancer at diagnosis is considered to be an incurable disease, and systemic treatment is indicated. However, several retrospective studies have shown that local treatment is an independent factor in improving overall survival, but this issue is still controversial. **Methods:** Systematic review with literature searches in MEDLINE (by PubMed), EMBASE, Clinical Trials, Scopus, Web of Science, SciELO, Lilacs, Google Scholar and Proquest electronic databases, and gray literature without restrictions on date, language or study design. Study selection and data extraction were performed independently by two authors. Data were summarized through meta-analyses using a random effects model and considered hazard ratio (HR) measures and their confidence intervals (95%CI). **Results:** After eligibility assessment, we included 16 studies in the systematic review, encompassing a total of 16,692 patients. Twelve studies were used in the quantitative analysis. The studies included in this review seemed to have overall good methodological quality. There was no association between an axillary surgical approach and overall survival (HR= 0.82; 95%CI 0.60–1.13). We identified as a secondary finding that there was a benefit from a breast surgical approach related to overall survival in patients with metastatic breast cancer (HR 0.70; 95%CI 0.60–0.82). **Conclusion:** An axillary surgical approach showed no association with overall survival in patients with metastatic breast cancer, but the breast surgical approach seemed to show a benefit in terms of overall survival. The true impact of locoregional therapies on long-term outcomes remains unknown, and randomized clinical trials are needed.

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GEOMETRIC COMPENSATION TECHNIQUE FOR BREAST CONSERVATIVE TREATMENT: EXPANDING THE INDICATIONS AND COSMETIC EVALUATION

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Background: Conservative breast surgery (CBS) associated with radiotherapy presents survival rates similar to mastectomy. The geometric compensation technique (GCT) is an oncologically alternative CBS for the patients who initially presented unfavorable results, with few studies have evaluated cosmesis and for long follow. **Objective:** To evaluate the indication, safety and cosmesis associated with GCT. **Methodology:** Ethics Committee approval 1594/2018. A retrospective study based on the review of patient records submitted to the GCT. Data related to the clinical, sociodemographic, treatment-related and disease-related characteristics. The patients were also prospectively evaluated in a cross-sectional way, aiming to evaluate the breast cosmesis. Descriptive statistics were performed. **Results:** 28 patients with a history of breast carcinoma were submitted to CBS using GCT. Most patients had breast ptosis II and III (96%) and CUP size C and D (100%). The majority of tumors (71.4%) presented clinical stage T1 and T2 and the mean clinical size of the tumor at diagnosis was 3.5±1.7 cm. The most common histological type was invasive mammary carcinoma (25 patients, 89.3%) and Luminal B Her 2 negative (15 patients, 53.6%). CBS was performed in 26 (92.9%) patients, and two (7.1%) patients had their initial proposal modified intraoperatively for mastectomy due to trans-operative findings. All patients had free margins. The mean follow-up time was 27.5±15.4 months. In this period, no patient had local recurrence. According to BCCT core software, 14 (56%) patients had a good esthetic result, 7 (28%) were reasonable, 3 (12%) were classified as excellent and 1 patient (4%) was classified as poor. **Conclusions:** The CBS using GCT is a safe option from the oncological point of view for patients with medium breasts and ptosis, who present large tumors in relation to breast size and who initially had indication of mastectomy, but who may undergo CBS.

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FIRST STUDY OF THE PREVALENCE OF THE TP53 P.R337H MUTATION IN BREAST CANCER PATIENTS IN THE CENTRAL REGION OF BRAZIL

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Breast cancer is the second most common type of cancer in the world and the most common among women. Of the total number of cancer cases diagnosed each year, it is estimated that 5 to 10% are hereditary, usually caused by mutations in tumor suppressor genes. Mutations in the TP53 gene are the most common genetic alterations in human malignant tumors and are primarily responsible for Li-Fraumeni Syndrome. Several cancers may be related to this syndrome and the most common is breast cancer. The mutation of the TP53 gene p.R337H has a high prevalence in the South and Southeast regions of Brazil, where its presence was observed in about 0.3% of the population in general. Despite the high incidence of this pathogenic mutation in these regions of Brazil, it is practically not known what the prevalence in the Midwest region is. Therefore, the present study had the initiative to describe, for the first time, the prevalence of the pathogenic mutation p.R337H of the TP53 gene in patients with breast cancer in the central region of Brazil. Among the 102 patients analyzed, a woman with the p.R337H mutation in heterozygosis was identified. These results suggest that the prevalence of this mutation in the Midwest is 1% (1/102) among breast cancer patients, a lower prevalence compared to studies in the South and Southeast regions that identified this variant in 2.5% and 8.5% of patients with breast cancer. We suggest that this mutation may be less frequent in the Midwest than in other regions of Brazil. This study reinforces the hypothesis that the founding haplotype of the p.R337H mutation appeared in the South region and moved through the Southeast, which justifies the high incidence of this mutation in these regions.

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REAL WORLD DATA ON PATIENT PROFILES AND PATTERNS OF CARE IN DE NOVO METASTATIC BREAST CANCER: AN ANALYSIS OF 17 YEARS (1995–2011)

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Objectives: To describe the epidemiological profile of women with de novo metastatic breast cancer (MBC) in Goiânia, using the incidence data from the population-based cancer registry (PBCR). **Methodology:** An ecological study conducted at the PBCR in Goiânia, Brazil, from 1995 to 2011. We included women with MBC at diagnosis and calculate the standardized incidence rate and the annual percentage change (APC) in the period. Clinical, demographic, diagnostic and treatment characteristics were analyzed in two periods (1995–2003 versus 2004–2011). **Results:** There were 5,289 cases of breast cancer, of these 277 (5.2%) in the metastatic stage. The adjusted incidence was 8.9/100,000 in 1995 and 6.04/100,000 in 2011 (APC -1.1, p=0.6). There was no difference in the incidence of metastatic breast cancer in the two periods studied. The majority of the patients were assisted by the public health system (70.3%) and the mean age at diagnosis was 54.7 (± 14.5) years. It was possible to analyze a subpopulation of 156 patients in the two main treatment centers in the city. By the immunohistochemistry, 52 (70.2%) women had hormone receptor positive (HR+), of which 14.0% (6/43) received endocrine therapy in the first line of systemic treatment and 48.5% (17/35) in second-line. Ten patients underwent resection of metastatic lesion (10/108, 9.2%). Comparison of clinical data between the periods 1995–2003 and 2004–2011 revealed no significant differences in relation to age, histological grade, staging, presence of symptoms at diagnosis, or treatment. **Conclusion:** Our study included a MBC population with predominantly locally advanced tumors and Luminal-like phenotype. The incidence rate of MBC in Goiânia did not change over the 17-year period. Most of the cases received chemotherapy in the first line of systemic treatment, independent of the tumor phenotype.

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OVERALL SURVIVAL INCREASE AFTER TREATMENT OF BRAIN METASTASIS FOR HER-2 POSITIVE PATIENTS USING TRASTUZUMAB

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Objectives: Breast cancer is a heterogeneous, phenotypically diverse disease composed of several biological subtypes that have distinct behavior. Amplification or overexpression of the human epidermal growth factor receptor 2 (HER2) oncogene is presented in approximately 15% of primary invasive breast cancers. Target anti-HER2 therapies have become important agents in the treatment of metastatic breast cancer and have altered the natural course of HER2-positive breast cancer. The risk of brain metastasis in women with overexpression HER2 is 12% in 10 years and a modality of treatment with brain radiosurgery (SRS) has been responsible for increasing local brain control with low morbidity. **Methodology:** Patients with diagnosis of breast cancer brain metastasis treated with SRS from 2007 to 2017 were divided into 3 groups: 1) HER2-positive who received treatment with trastuzumab (subgroup-1); 2) HER2-positive who didn't receive treatment with trastuzumab (subgroup-2) and; 3) HER2 negative, including triple negative and luminal (subgroup-3). 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 diagnosis and survival after radiosurgery for brain metastasis (OSARS-overal survival after RS). **Results:** Among the 78 patients with brain metastasis of breast cancer treated with SRS, 37% were HER2-positive. WBRT can be avoided in 66% HER2-positive patients, and in the subgroup-1 can be avoided in 62%. OS in 5 years was 31% (mean: 34 months, 95%CI 26.95–42.49). OS after diagnose CNS metastasis in 5 years was 18% (95%CI 26.95–42.49). PFS for the CNS after 1st radiosurgery in 1 year was 67% and 5 years was 9% (mean: 56months, 95%CI 19.48–31.50). The average time patient was alive after CNS metastasis was 56 months for subgroup-1 and 31 months for subgroup-2 and 36 months for subgroup-3. OS in 2 years after treatment of CNS metastasis was 80% for subgroup-1 (OR=0.9, 95%CI 0.19–4.5, p=0.01) when compared with subgroup-2, and OS in 2 years after treatment of CNS metastasis was 68% for subgroup-2 and 65% for subgroup-3. **Conclusion:** The results corroborate that SRS of CNS metastasis combined with trastuzumab therapy in HER2-positive patients may act in synergism, contributing with OS increase after treatment with SRS in CNS metastasis.

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EFFECT OF NUTRITIONAL STATUS ON HEALTH-RELATED QUALITY OF LIFE (HRQL) THROUGHOUT CHEMOTHERAPY: A PROSPECTIVE STUDY

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This prospective study aimed to evaluate the effect of nutritional status and chemotherapy (CT) time; beginning (T0), during (T1) and after the end of the CT (T2); as well as the interaction between these variables on the domains of health-related quality of life (HRQL). Anthropometric data was performed including 55 women with breast cancer, and the HRQL was analyzed with the EORTC QLQ-30 and BR23 instruments, 21 days after each investigated time, always before CT. Body Mass Index (BMI) and waist circumference (WC) increased significantly ($p=0.009$ and $p=0.030$, respectively), in T2 when compared to T0. The Generalized Estimated Equations (GEE) were controlled by age, the estimated marginal means was analyzed, and 95% confidence intervals were compared pairwise by applying Sidak for multiple tests. The domains functional global, physical function and symptoms were significantly associated with BMI (equation 1: $p=0.025$, $p=0.019$ and $p=0.016$, respectively) and WC (equation 2: $p=0.015$, $p=0.016$ and $p=0.024$, respectively), with the CT time (equation 1: $p<0.001$, $p<0.001$ and $p=0.003$; equation 2: $p<0.001$, $p=0.001$ and $p=0.013$, respectively), with the interaction between CT time and BMI (equation 1: $p=0.032$, $p=0.012$ and $p=0.042$, respectively), and with CT time and WC (equation 2: $p=0.028$, $p=0.035$ and $p=0.024$, respectively). When assessing the post-hoc (Sidak), it was identified that the worse scores of HRQL domains were observed in T2, and these were associated with worst nutritional status. Higher BMI and WC negatively impacted the HRQL, situation worsened with the passing of CT time, which could harm the treatment and survival of these women. Actions aimed at minimizing the impairment in HRQL, such as maintaining healthy nutritional status, need to be adopted to reduce the effects of this exhausted treatment.

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ANALYSIS OF EPIGENETIC MOLECULES SIRT2 E SIRT6 IN BREAST CANCER SUBTYPES

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The aim of this study was to evaluate the gene expression of sirtuin 2 (SIRT2) and 6 (SIRT6) in 18 breast cancer fresh tissue samples of which 2 HER2+, 11 luminal B, and 5 luminal A. Clinical and staging data were considered. RNA was purified using the RNeasy Mini Kit (Qiagen), cDNA was prepared using QuantiTect Reverse Transcription (Qiagen). The analysis was performed by qPCR (quantitative polymerase chain reaction) in the real-time PCR systems StepOnePlus™ (Applied Biosystems) using the GoTaq® qPCR Master Mix kit (Promega). β -actin was used as the reference gene to normalize the expression of SIRT2 and SIRT6 with specific primers. Correlations between tumor groups and clinicopathological features were analyzed using Mann-Whitney for independent samples and paired t test in GraphPad Prism 7.0 software. In luminal A and B groups, SIRT2 gene expression levels exhibited a correlation with the clinical-pathological staging scores, respectively, $p=0.0265$ and $p=0.0001$. HER2+ samples showed no correlation between SIRT2 and SIRT6 gene expression and staging. Characteristics such as age, obesity, smoking and alcoholism did not correlate with the genetic expression of the SIRTs in any of the breast cancer subtypes of this study. Sirtuins (SIRTs), class III histone deacetylases, are differentially expressed in several human cancers, where they display both oncogenic and tumor-suppressive properties depending on cellular context and experimental conditions. SIRT2 exists in the cytoplasm, deacetylates tubulin, and was observed to have tumor-promoting activity in several studies. SIRT6 localizes in the nucleus and deacetylates histone H3K9 and H3K56 to maintain genome stability and telomere function. This study points to the potential of studying sirtuins in relation to breast cancer. Above all SIRT2 appears to play a pro-tumorigenic role, which could serve as a biomarker of poor prognosis.

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PLASMA BIOMARKERS OF SYSTEMIC REDOX STATUS: A POTENTIAL PREDITOR OF CHEMOTHERAPY. EFFICACY IN WOMEN WITH BREAST CANCER

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The aim of this study was to verify if the profile of plasma biomarkers of systemic redox status differ between women with breast cancer (BC) submitted or not to chemotherapy (CT), and to associate these results with the CT protocols used in clinical practice. Women with BC were divided in two groups: patients not previously submitted to CT (n=23) and patients previously submitted to CT (n=43). Blood samples were collected and plasma was used to perform biochemical analysis to determine the levels of antioxidant enzymes: superoxide dismutase (SOD), catalase (CAT), glutathione reductase (GR), and glutathione peroxidase (GPx), as well as the levels of glutathione tripeptide reduced (GSH). Statistical analyses were carried out using SPSS version 21.0, and Mann Whitney test was performed to verify the differences between groups. Significant differences were found for all activity profiles of the antioxidant enzymes, with a higher enzymatic activity in BC women who underwent CT ($p < 0.05$). This result showing higher production of these enzymes in those women reinforces the adaptive capacities of the organism to CT. Lower levels of GSH were found in CT group ($p < 0.001$), especially in those using FAC (5-fluorouracil, adriamycin and cyclophosphamide) protocol. These results may indicate that the regeneration of GSSG to GSH in prooxidative treatment does not remain constant even with the greater production of the GPx and GR enzymes, and that regeneration is subject to interference from other metabolic pathways, such as the pentose phosphate pathway. In addition, the chemotherapeutic protocol (FAC) have been shown to influence on higher oxidative stress. We suggest the investigation of this systemic redox status of women submitted to CT as a relevant conduct to evaluate the efficacy of the chemotherapeutic protocol.

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ATTENUATED TOTAL REFLECTION-FOURIER TRANSFORM INFRARED (ATR-FTIR) SPECTROSCOPY ANALYSIS OF SALIVA FOR BREAST CANCER DIAGNOSIS

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This study aims to investigate differences in the spectra between the analyzed groups of patients, as well as the specific influence of the relevant clinical characteristics of breast cancer patients. Moreover, the possible vibrational modes and molecules that contribute to the spectral differences are described. Saliva samples were collected before surgery from 10 patients with confirmed breast cancer by clinical, histological, and pathological examination; 10 patients with benign breast disease; and 10 without pathological findings, the control group. Saliva samples were processed and lyophilized overnight. The spectra were measured in a FTIR spectrometer VERTEX 70/70v coupled with platinum diamond ATR. ATR-FTIR spectroscopy was capable to discriminate breast cancer saliva from benign breast disease and control. Higher absorbance levels were found in breast cancer patients at wavenumber 1041 cm^{-1} , with reasonable accuracy, and in the area of 1433–1302.9 cm^{-1} region, with good accuracy. These increases in absorbance levels between breast cancer and the other two groups of patients were associated to changes in vibrational modes of nucleic acids, protein, lipids, and carbohydrates. Changes in absorptions bands within breast cancer group were found to be dependent of the tumor phenotype and related mainly to protein and nucleic acid. Therefore, the FTIR spectroscopy was capable to show biochemical changes in saliva components as result of breast carcinogenesis that cause different vibrational modes in the biomolecules. This study is the first to generate FTIR spectra from saliva and derive chemical fingerprints for the purpose of diagnosis and prognosis of breast cancer. It is important to note that differently from other methods that search biomarkers in saliva, FTIR detect changes at a multi-molecular level, being a promising tool for early diagnosis and prognosis of breast cancer.

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COMPARISON OF THE ANTIPROLIFERATIVE ACTIVITY OF DIFFERENT EXTRACTS FROM *POTHOMORPHE UMBELLATA* IN BREAST CANCER CELL LINES

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Breast Cancer (BC) is the second most common cancer type in women. The search for natural products has become increasingly important and promising in oncology. The aim of this study was to evaluate the *in vitro* cytotoxic potential of hexanic, chloroformic and hydromethanolic extracts from *Pothomorphe umbellata*, and to compare their antiproliferative activity in the mammary cell lines: MCF10-A (non-tumorigenic control), T47D, MCF-7 and MDA-MB231 (tumoral lineages). The cells were maintained in appropriate culture media according to the recommendations of the ATCC (American Type Culture Collection). The extracts from the aerial parts of *P. umbellata* were used for the treatment of BC cells at different concentrations (1 mg/L, 0.5 mg/L, 0.25 mg/L, 0.125 mg/L, 0.0625 mg/L, 0.03125 mg/L, 0.015625 mg/L and 0.0078125 mg/L) for 24 and 48 hours. The IC₅₀ and selectivity index were calculated. Statistical analyses were performed using GraphPad Prism 8.0 software. We observed a statistically significant decrease of all tumoral lineages proliferation after treatment with all extracts in all concentrations when compared to experimental controls (cells with culture medium alone). In the negative control (DMSO diluent) there were no statistically significant differences. The chloroformic extract from *P. umbellata* was the most effective in antiproliferative capacity. For the MCF-7 cells the IC₅₀ values were: 0.65 mg/L after treatment with the hexanic extract; 0.16 mg/L with the chloroformic extract and 0.5 mg/L with the hydromethanolic extract. For MDA-MB231 it was not possible to calculate the inhibitory concentration. The chloroformic extract was highly selective for the MCF-7 and T47D strains (19.9 and 15.1, respectively). Few studies report the antitumor activity of this species, especially in BC. The results for chloroformic extract are promising for the treatment of luminal tumors, and additional studies are necessary to validate the response of this molecular subtype.

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POTENTIAL APPLICATION OF A SEROLOGICAL SPECTRAL BIOMARKER FOR ALTERNATIVE DIAGNOSIS OF BREAST CANCER

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The objective of this study was to determine whether Attenuated Total Reflectance Fourier Transform Infrared (ATR-FTIR) spectroscopy can be used to discriminate patients with benign breast disease from malignant breast neoplasms according to specific characteristics of the spectral signature of its serologic molecular composition. The present study was conducted with 18 women with benign breast disease and 18 women with malignant neoplasms. Blood samples were collected and plasma was separated for further processing on a VERTEX 70/70v FTIR spectrometer coupled with ATR platinum diamond. All the spectra were corrected by the baseline and normalized by the mean vector. The quantitative variables were submitted to the Kolmogorov-Smirnov test to verify the degree of adherence to the normal distribution. Statistical analysis was performed using unpaired t-test (significance level $p < 0.05$) using Prism 7.0 software. The spectrum of serum of patients with breast neoplasm and benign breast disease showed several vibrational modes and from these, one vibrational mode was pre-validated as potential diagnostic spectral biomarker by ROC curve. The vibrational mode at $2937,2 \text{ cm}^{-1}$ of malignant breast neoplasms patient was lower ($p < 0.05$) than benign diseases. This vibrational mode demonstrated a sensitivity and specificity of 72.2 and 77.8%, respectively. Altogether, $2937,2 \text{ cm}^{-1}$ spectral serologic biomarker may provide a novel robust alternative for breast cancer diagnostics.

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REGIONAL DIFFERENCES OF BREAST CANCER SURGERIES AMONG BRAZIL'S PUBLIC HEALTHCARE USERS: A 10-YEAR STUDY

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Objective: Analyze if occurred an increase of mastectomies and breast conservation surgery in patients treated by the Brazilian National Health System (*Sistema Único de Saúde* – SUS) between 2008 and 2017, as well as analyze if there were differences between the types of surgical procedure among Brazil's regions. **Methodology:** Descriptive time-series study of breast cancer surgeries, according to the population-based database on hospital information (DATASUS/SIH), all data of breast surgery were included, between 2008 and 2017. The absolute number of procedures was analyzed with Poisson regression, using Jointpoint Regression program and for the Annual Percentual Change (APC) was acquired for the trend, with a confidence interval of 95% and statistical significance when $p < 0.05$. A linearity test was used to assess the differences among Brazil's regions. **Results:** During the period studied, we found a decreasing trend of simple mastectomy in the South (APC -7.19) from 2008–2015; APC -53.87 from 2015–2018) and the Northeast (APC -14.34); in the North, we found a decreasing trend only during 2015–2017 (APC -42.52) and a stabilization trend in other regions. We only found an increasing trend of radical mastectomy in the North (APC 3.67); a decreasing trend was found in the Northeast (APC -3.5), in the Southeast (APC -2.56), and in the South (APC -1.66) Stabilization was only found in the Midwest. Relative to breast conservation surgery, the only region with an increased trend was the Midwest from 2008–2013 (APC 10.32); the South presented a decreasing trend (APC -5.13), Northeast from 2015–2017 (APC -29.61) and Midwest from 2013–2017 (APC -5.51), and stabilization was found in the North and the Southeast. The linearity test revealed that there is difference related to the type of surgery and regions, with statistical significance. **Conclusions:** During the period analyzed, we found a stabilization trend of breast surgeries in Brazil and in its regions. However, there were some differences among those regions, not only the total number of surgeries but also as the type of surgery performed.

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INVASIVE APPROACHES IN BENIGN BREAST TUMORS IN BRAZIL

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Objectives: Quantify the number of invasive approaches in benign breast tumor in women in Brazil, based on the variables of surgical procedures, clinical size and detection of the injury. **Methodology:** An ecological study, population-based and cross-sectional design. Considered the total number of invasive approaches in benign breast tumor in Brazil between 2009 and 2015. 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 79,074 surgical procedures were performed in benign breast tumor in Brazil during the quoted period. Of these, 14.6% segmental resections and 3.8% mastectomies. Being 67% of the segmental resections and 58.4% of the mastectomies performed in tumors smaller than 5 cm. Among the procedures, 33.8% were in fibroadenomas, with 6.7% of segmental resections and 1% of mastectomies. Being 81.8% of the segmental resections and 61.8% of the mastectomies performed in fibroadenomas smaller than 5 cm. The detection occurred by image in 43.6% of these tumors. **Conclusion:** This study verified a progressive increase of invasive approaches in benign breast tumors in women between the period from 2009 to 2015 in Brazil. Among the benign tumors, 7.7% of the fibroadenomas were submitted to invasive surgical procedures, the majority of them smaller than 5 cm. However, the literature recommends non-invasive procedures such as clinical follow-up and tumorectomy by mamotome or cryoablation. A significant number of fibroadenomas were identified by image, a high accuracy diagnostic method according to the literature. Taking into account that invasive surgical procedures are not recommended for the treatment of benign tumors, as well as the physical and emotional impacts on women's lives submitted to them, studies are relevant to understand the reasons for this approach.

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TELOMERASE POLYMORPHISM AND BREAST CANCER

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Introduction: Breast Cancer is the most common type of cancer in women around the world. Recent numbers show an estimative of 252.710 new cases in the United States, which will be responsible for 40.610 deaths in 2017. Considering the importance of this data, we search in the literature factors that could contribute to the genesis of this type of tumor. Several studies have reported that the length of telomeres in solid tumor tissues may be a potential marker of prognosis. In addition, telomere shortening is associated to several prognostic factors in Breast Cancer. Telomeres cap the ends of linear chromosomes and play a role in maintaining genomic stability. They prevent chromosomes from shortening during DNA replication, by precluding chromosome ends from being recognized as double strand breaks that are targeted for repair, resulting in the improper joining of chromosome ends. The minimum essential components of telomerase are the catalytic subunit, telomerase reverse transcriptase (TERT), and a non-coding RNA (TERC); TERT reverse transcribes telomere DNA using TERC as the template. It was revealed that telomerase is activated in malignant cells, and that telomerase activation in cancers is closely related to acquired expression of TERT. Given the fundamental role of TERT in oncogenesis, polymorphisms of genes related to telomerase may influence the expression levels of this enzyme, influencing the host's susceptibility to tumor progression and metastasis. We aim to analyze the telomerase polymorphism in breast cancer patients and to test the correlation of such data with the prognosis and diverse clinical variables. **Methodology:** Experimental clinical study, in which the study population consisted of breast cancer patients who accepted to participate in the study, attended from March 2015 to September 2016 at Hospital Universitário de Brasília (HUB) and Cancer Center of Brasília (CETTRO). Standard extraction was performed by dehydration and precipitation with saturated NaCl solution, according to Miller, Dykes & Polesky (47) methodology. After extraction, DNA was diluted in ultrapure water (chromatographic grade). DNA concentration and purity were determined by spectrophotometry using the NanoDrop One equipment (Thermo Scientific, Madison, USA). DNA samples were aliquoted and frozen at -80°C. The Strategy was sequencing of the rs2736100 polymorphism region in the human hTERT gene after conventional PCR amplification. The primer sequences were: F: 5'-ATG CGA CAG TTC GTG GCT CA-3' and R: 5'-ATC CCC TGG CAC TGG ACG TA-3' (Sigma Aldrich, Canada, 0.025 µmol). GraphPad Prism software version 7.02 was used for all analyzes. In addition, p<0.05 was considered statistically significant. **Results and Conclusion:** A total of 103 patients were selected for DNA analysis. All of them had the C allelic with the frequency of 0.79, and only 27 cases of T allelic with 0.21 of frequency. After the execution of analyzes, we found 41 cases of CC genotype, 23 cases of CT genotype and 3 cases of TT genotype. We also studied the polymorphism 92 (CC) and found that the CT polymorphism is related to a higher tumor grade, in this case grade 3 with p-value >0.0285. This relation shows that this polymorphism may be related to more aggressive tumors. Therefore, we found one among many crosses of telomerase polymorphisms with tumor characteristics.

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BARRIERS RELATED TO MAMMOGRAPHY IN THE RIVERSIDE POPULATION OF THE BRAZILIAN AMAZON: CASE-CONTROL STUDY

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Background: Mammographic screening promotes early detection in the asymptomatic phase. Due to economic and logistical limitations in Brazil, mammographic screening is not available to all individuals, which is expressed in the high number of patients diagnosed at an elevated stage. There is a lack of knowledge related to the real barriers regarding the challenges to perform mammography in the riverside rural population in Amazônia. **Objective:** To evaluate the factors related to the limitation of access, knowledge and information on breast cancer of the riverside population in Amazonia. **Methods:** Ethics Committee approval (1401/2017). A prospective, transversal, case-control study carried out in the urban and riverside area of the city of Porto Velho/Rondônia, in women aged 40–69 years. A mammography examination was offered, and a questionnaire was carried out, evaluating factors related to non-mammography adherence. Descriptive statistics were performed. To compare the groups, the chi-square and the Mann-Whitney test were performed. **Results:** The convenience sample consisted of 112 women who participated in the study, being 46 of riverside population (case), in a ratio of 1:1.4. Reported reasons for non-compliance were absence of symptoms, difficulty in performing the test, non-medical request, fear of pain, lack of knowledge of the age of the test. Comparing the characteristics of each group, these did not differ in relation to race ($p=1.00$), age ($p=0.17$). Evaluating health care, patients in the riverside region had a higher frequency of never having undergone MMG examination in their lifetime ($p=0.04$), lack of knowledge about the regularity of MMG ($p=0.01$). **Conclusions:** Patients in the riverside population presented a higher social vulnerability, associated with a lower rate of MMG testing in life, but had similar knowledge about self-examination, presenting regular medical guidance to MMG. The Mobile Prevention Unit minimized the differences between the groups.

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BRINGING PATIENT NAVIGATION TO PRIMARY HEALTH CARE IN RIO DE JANEIRO: PILOT PROJECT IN THE ANDARAÍ COMMUNITY

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This research project aims to study the increase of mammographic coverage rate with Patient Navigation Program (PNP) in a community of Rio de Janeiro. The general objective is to measure adherence to Ministry of Health's recommendations for breast cancer screening with mammography, with the help of a patient navigator. Other objectives include: 1) establish the viability of the PNP in this context; 2) identify the barriers to mammography screening and; 3) ensure that at least 70% of women recruited between 50 and 69 years of age and asymptomatic update the biennial mammographic examination and annual clinical examination, increasing the mammographic coverage from 14% to at least 70%, which is the considered acceptable rate by the World Health Organization. From March to September 2018, women from the Andaraí Community were recruited in the Municipality of Rio de Janeiro. The follow-up was carried out by telephone, e-mail, and text messages. Of the 678 women (average age=58), 12% refused to participate in the PNP for cultural reasons. All 599 women participants reported barriers to obtaining breast health care with the number of barriers reported ranging from 1 to 6 barriers, (average=3). The main barriers were system problems with health care programming (100%), financial problems (64%), communication concerns with the medical staff (58%), fear (44%), and social support (14%). We obtained 100% satisfaction with the PNP and exceeded our goal with 88% mammographic coverage rate. The PNP for breast cancer in the Andaraí Community has proven to be feasible in the context of local public health. The PNP promoted an increase in the mammographic coverage rate to 88%, assisted in the transmission of quality information, reduced the fear of mammography, and facilitated access to breast health care.

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PREDICTION OF ATTENDANCE TO THE “60 DAYS LAW” WITHIN THE PATIENT NAVIGATION PROGRAM TO BREAST CANCER IN RIO DE JANEIRO

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An applied study was conducted on how the use of machine learning techniques can help in the process of identifying compliance with the “60 Day Law”, which states that all patients with cancer within the public system must initiate the treatment within 60 days after the diagnosis of cancer. Within the Patient Navigation Program (PNP) for breast cancer in Rio de Janeiro, the study aims to: identify barriers to compliance with the Law; ensure that at least 70% of patients recruited with breast cancer initiate treatment within the mandatory 60-day period; and to construct a model that accurately predicts whether or not a patient meets the period established in the Law. From August 2017 to May 2018, 105 patients aged 33–80 years (mean 59 years) were recruited for navigation. The Patient Navigator (NP) applied questionnaires to collect clinical, psychosocial, and patient satisfaction information. The follow-up was by phone, email, or text message. For the development of the statistical analysis, the AdaBoost learning model had superior results in relation to accuracy and f-score (0.8889 and 0.8333, respectively) with 38 important attributes. Patients presented 0–I (17%), II–III (78%) and IV (5%) staging. Patients had on average 5 barriers. The main barriers to compliance with the Law were: Fear and fatalistic thoughts (99%), financial problems (79%) and uncoordinated health care (76%). The PNP had 100% patient satisfaction and in 52% of the cases it helped at the beginning of the treatment within the period established by law. The study did not reach the success rate of 70% compliance with the Law as intended. However, the barriers that NP cannot overcome, such as the lack of human resources and medical supplies, have been reported to health authorities and hospital administrators.

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STRATEGIES OF GUIDELINES IMPLEMENTATION FOR THE BREAST CANCER EARLY DETECTION IN BRAZIL

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Early detection actions, according to the recommendations of the Ministry of Health (MH), can increase its effectiveness, and measures are needed to increase the adherence of health professionals and the population. This research project has as general objective to identify strategies of guidelines implementation for the breast cancer early detection that can be used in Brazil. In relation to the specific objectives, they propose to: identify, in the specialized literature, studies on the difficulties and the strategies of implementation of the guidelines for the early detection of breast cancer in the health systems of different countries; to evaluate the applicability of the results found in the Brazilian context; recommend priority actions within the strategies for implementing the guidelines to the organizations responsible for these processes in the field of public health. A systematic review was performed using the Supporting Policy Relevant Reviews and Trial (SUPPORT) tools to aid in the structuring of searches and data analysis. The databases used were PubMed/MEDLINE, Cochrane Library, VHL/LILACS and EMBASE from January 1, 2008 to May 1, 2018. Inclusion criteria: year and period of publication; availability of the full systematic review article in English, Portuguese, French and Spanish; and the use of descriptors. The study of nine selected systematic reviews identified successful actions in developed and developing countries. Actions should, if possible, encompass multiple components, including: organizational change of the system: foster leadership committed to the implementation of guidelines, better governance of health services close to the target audience and flexible schedules, mobile mammography, patient navigation program; in professionals' practice: engagement of breast cancer specialists in primary care to optimize the training of health professionals and users; in the use of health services by the users: national mass publicity campaign, involving multiple MH actors, health secretariats, civil and medical organizations.

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SEXUAL DYSFUNCTION AMONG WOMEN WITH BREAST CANCER DIAGNOSTIC: DESCRIPTIVE STUDY

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Background: Studies about women's sexuality run into the lack of common sense concerning the adequate model of evaluation. In the presence of morbidity, such as breast cancer, in which physical and biological changes may happen due to treatment, this evaluation may reflect the way women face the disease. **Objective:** Describing women's sexual dysfunction in the moment they receive the diagnostic for breast cancer. **Method:** Descriptive study held in a reference support center. The Female Sexual Function Index Questionnaire (FSFI), in which 19 questions evaluated the sexual function during the last month, including the following domains: sexual desire, sexual arousal, vaginal lubrication, orgasm, sexual satisfaction, and pain. Reliability analysis was held by using Cronback's alpha, categorized age group above and below 50 years old; the cut-off was between 25.66 and 22.80 according to the total FSFI scale for the dysfunction diagnostic. All of the participants were volunteers and freely took part in this study. **Results:** 42 women participated in the study, being the mean age 48.2 (± 11.5), 26 minimum and 72 maximum. The group ages were similarly distributed. The instrument reliability was 0.901. We identified 35 (83.3%) and 25 (59.5%) women with sexual dysfunction (cut-off 25.66 and 22.8 respectively). There was not any differences in the distribution of the results according to group age. The lowest scores were in the following domains: sexual desire (2.5; ± 1.0), sexual arousal (3.0; ± 1.0). On the other hand, the highest ones were "pain" (4.6; ± 1.7) and vaginal lubrication (4.1; ± 1.2). There was negative and moderated parity between the domains "satisfaction" and the woman's age (-0.341; $p=0.031$). **Conclusion:** Women's sexual dysfunction showed high prevalence on women with breast cancer diagnostic, even though they had claimed having sexual satisfaction. The instrument cut-off range must be taken into account.

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MICRO-RNA 21 ACTING AS AN ONCOMIR ON HER2 POSITIVE BREAST CANCER: A META-ANALYSIS

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Objectives: Human epidermal growth factor receptor 2 (HER2) play an important role in the development and progression of certain aggressive types of breast cancer. Recent studies have revealed that microRNA-21 (miR-21) has been shown to be a key regulator of breast cancer carcinogenesis. In this study, we aim to perform a meta-analysis to evaluate hsa-miR-21 expression on HER2 positive breast cancers. **Methodology:** For this meta-analysis articles were searched from three scientific databases (PubMed Central, Web of Science, and Scopus) between the years 1999–2019 using the following descriptors: (microRNA-21 OR miR-21 OR hsa-miR-21) AND (breast cancer). From 61 studies initially found, a total of 3 eligible articles comprising 181 participants were selected for present work. Only studies that used patient tumor cells were included. **Results:** In this study it is likely that high miR-21 expression level is linked to HER2 positivity pooled ORs were 2.0715 ($p=0.0313$), which is related to aggressive breast cancer biology even though there is a targeting treatment, suggesting that patients will have a poorer outcome. **Conclusion:** Meta-analysis supports the role of miR-21 as an oncogene and a biomarker for breast cancer and its relationship with other prognostic factors HER2 positiveness.

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BREAST CANCER SURVIVAL: A HOSPITAL REGISTRY-BASED RETROSPECTIVE COHORT OF SÃO PAULO, BRAZIL

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Objectives: To describe sociodemographic characteristics, clinical stage at diagnosis, treatment, immunohistochemistry subtypes (Estrogen Receptor – ER, Progesterone Receptor – PR, and Human Epidermal growth factor Receptor-type 2 – HER2), and survival rates of breast cancer for women treated in São Paulo (Brazil). **Methodology:** We conducted a hospital registry-based, retrospective cohort study on 907 women with breast cancer, ages ranging from 22 to 96 years old, diagnosed between January 1, 2000 and December 31, 2013. Data were extracted from the Oncocenter Foundation of the State of São Paulo (FOSP). A 5-year overall survival analysis was performed using the Kaplan-Meier method and Cox proportional hazard ratios (HR) and 95% confidence interval (95%CI) were calculated. **Results:** Mean age at diagnosis was 57 years (DP=13.2). According to histology, 74% were invasive ductal carcinoma and 63.5% were classified as I or II (63.4%). For treatment, 51.4% were combined therapy (surgery/RT/QT/HT). ER+/PR+/HER2- was the most common subtype (528; 58.2%). In the multiple analysis, subtype EP+/RP+/HER2- ($HR_{adj}=0.43$; $p<0.001$) and combined therapy ($HR_{adj}=0.62$; $p=0.014$) were both associated with a reduction in the risk of death. For clinical stage at diagnosis, the stages III and IV have shown an increased risk of death ($HR_{adj}=2.87$; $p<0.001$ and $HR_{adj}=10.43$; $p<0.001$, respectively). **Conclusions:** In our study, combined treatment and EP+/RP+/HER2- subtype were predictive prognostic factors for high overall survival rates in women with invasive breast cancer. On the other hand, advanced clinical stage (III/IV) at diagnosis have shown as unfavorable prognosis for overall survival rates.

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IS SENTINEL LYMPH NODE BIOPSY SAFE FOR T3 AND T4 BREAST TUMORS? ANALYSIS OF A INSTITUTIONAL CASE SERIES AND SYSTEMATIC LITERATURE REVIEW

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Introduction: The presence and extent of axillary lymph node involvement represents an important prognostic factor, with an impact on therapy in breast cancer. The sentinel lymph node biopsy (SLNB) is an accepted modality for tumors T1 and T2 with negative axilla (N0), but many patients with T3–T4 tumors with N0 are often submitted to unnecessarily axillary lymph node dissection (ALND). There is a limited number of patients in published series, and selected cases may have axillary preservation. Thus, the objective of this study is to evaluate the negativity and safety of SLNB in T3 and T4 tumors, associated to the clinically N0, based on a series of institutional cases and a systematic review of the literature. **Materials and Methods:** A retrospective, observational study of patients treated for breast cancer at a tertiary cancer center between 2008 and 2015, with T3 / T4 tumors and N0 who underwent SLNB. A systematic review of literature was also carried out in 5 databases through the PICO methodology. **Results:** We analyzed 73 patients, 9 of whom were cT3 (after surgery they became pT2), 47 pT3 patients and 17 T4b patients. SLNB was identified in all cases and was negative for macrometastasis in 60.3% of the patients. With a mean follow-up time of 45 months, no ipsilateral axillary local recurrence was observed. In the systematic review, 504 articles were found, and only 7 presented data for analysis. Grouping these studies with the present series, it is observed that, among 374 T3 patients, the rate of N0 was 32.1%; for 41 T4b patients, the rate was 61.0%; for 431 patients grouping the whole series (T3 and T4), the rate was 32.5%. **Conclusions:** The performance of SLNB in T3/T4b tumors is feasible and a safe procedure from the oncological point of view, as it has not been associated with ipsilateral axillary relapse.

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STANDARD BREAST-CONSERVING VERSUS ONCOPLASTIC SURGERY: A LOCOREGIONAL RECURRENCE COMPARISON

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Objectives: Oncoplastic surgery has provided new options for breast conserving surgery – including cases of locally advanced diseases and multifocal tumors – with better aesthetic results, thus contributing to a better quality of life for patients. Oncological safety is still being discussed, mainly with reference to the incidence of local recurrences as well as the influence of breast remodeling on the accuracy of imaging tests and the planning of adjuvant radiotherapy. **Methods:** This is a retrospective, cross-sectional study of patients who underwent breast conservation surgery for invasive and non-invasive breast cancer at the Nossa Senhora da Conceição Hospital (HNSC) from 2010 to 2017. **Results:** A total of 956 cases of breast conservation surgery were considered for our study: 90 cases of oncoplastic surgery and 866 cases of standard conservation surgery. The mean follow-up time was 51 months. Standard breast conservation surgery was related to post-menopausal patients, aged 70 years or older. Significantly, oncoplastic surgery was more frequently indicated for patients between 31 and 39 years old. Tumor size, multicentricity, and axillary involvement were identified in greater numbers in oncoplastic surgery. There was no statistical difference between local recurrence and death in relation to breast cancer. **Conclusions:** Oncoplastic surgery is an individualized surgical treatment which aims to maintain oncological safety while achieving better aesthetic results and minimizing the mutilation of female patients affected by breast cancer.

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FIRST BRAZILIAN EXPERIENCE WITH VACUUM-ASSISTED BREAST BIOPSIES GUIDED BY PRONE TOMOSYNTHESIS: 197 CASES

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Objectives: To demonstrate the first Brazilian experience with Prone Tomosynthesis-guided (PTG) vacuum-assisted breast biopsies (VABB) in lesions identified on mammography or tomosynthesis. **Material and methods:** From November 2018 to February 2019, 197 PTG VABBs in this institution. **Results:** We retrospectively reviewed 197 PTG VABBs in patients referred from their doctors, with lesions categories 3, 4 and 5 BI-RADS[®], observed in their mammograms or tomosynthesis. The mean age was 54 years (age range 31–90 years). For this we used the Affirm[®] prone Hologic system, and 9 Gauge dedicated needles. Mean time procedure was 12 minutes (time range 8–17 minutes), shorter than usually with Prone stereotactic vacuum-assisted breast biopsy (22 minutes) and fewer exposures were acquired. The greatest conspicuity area of the lesions were easier to achieve, as well as that lesions identified only on DBT. The clip placement was introduced in the same slice as the lesion was accessed, providing more precision for its location. It's possible to use the Lateral arm to access lesions in very thin breast after compression, and the tomosynthesis of the specimens shows greater number of calcifications than in the digital mammography of them. **Conclusion:** PTG VABB showed promising results, especially in that cases identified only on DBT and because they can be performed in less time, and less exposures than with the prone stereotactic system.

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HIGHER PRO-INFLAMMATORY DIET AND WORSE NUTRITIONAL STATUS DURING CHEMOTHERAPY: A PROSPECTIVE STUDY WITH BREAST CANCER WOMEN

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This prospective study aimed to evaluate, for the first time in the literature, the association between the Dietary Inflammatory Index (DII) score and the average consumption of food groups (grams/day), at three times of chemotherapy (CT), beginning (T0), during (T1) and after the end of treatment (T2), as well as the relationship between the modification of the nutritional status and those variables. Anthropometric and dietary assessments of 55 women with breast cancer undergoing CT were performed, the latter by applying nine nonconsecutive 24h dietary recalls, three at each time. Friedman's test has showed that weight, Body Mass Index and waist circumference increased significantly ($p=0.008$, $p=0.009$ and $p=0.030$, respectively), indicating a worse nutritional status in T2 when compared to T0. The Waist-to-Height Ratio and Waist-Hip Ratio presented weak and positive Pearson's correlations with DII in T1 ($r=0.267$, $p=0.026$) and in T2 ($r=0.298$, $p=0.027$), indicating that those women with higher abdominal fat deposition presented more pro-inflammatory diet. Consumption of Poultry and Eggs [$F(2, 108)=3.358$; $p=0.038$] was significantly higher in T1 when compared to T2, while Total Fruits [$\chi^2(2)=13.237$; $p=0.001$] and Total Vegetables [$\chi^2(2)=17.491$; $p<0.001$] presented higher consumption in T0 compared to T1 and T2. The IID score increased considerably throughout the treatment, indicating that diet became more pro-inflammatory [$\chi^2(2)=61.127$; $p<0.001$]. Total Fruits [T0: $R^2=0.208$, $p=0.001$; T1: $R^2=0.095$, $p<0.001$; T2: $R^2=0.120$, $p=0.012$] and Total Vegetables [T0: $R^2=0.284$, $p<0.001$; T1: $R^2=0.365$, $p<0.001$; T2: $R^2=0.580$, $p<0.001$] showed significant predictive capacity of the IID in the three times; while Total Grains in T1 ($R^2=0.084$, $p=0.033$) and T2 ($R^2=0.118$, $p=0.013$); and Simple Sugars, in T0 ($R^2=0.137$, $p=0.006$) and T1 ($R^2=0.126$, $p=0.008$). We suggest that the adoption of healthy eating habits associated with healthy nutritional status maintenance may reduce the chronic inflammation and the risk of recurrence and comorbidities, reinforcing the importance of multi-professional follow-up undergoing CT.

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EATING LATE AND LESS FREQUENTLY HAS A NEGATIVE IMPACT ON THE DIET QUALITY OF BREAST CANCER WOMEN UNDERGOING ENDOCRINE THERAPY

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This cross-sectional study aimed to verify the effect of meal timing and eating frequency on quantitative and qualitative food consumption, as well as the physical and biochemical measurements of breast cancer women undergoing endocrine therapy with tamoxifen. Quantitative dietary assessments of 84 women were performed by applying three nonconsecutive 24h dietary recalls. The Brazilian Healthy Eating Index Revised (BHEI-R) was used for the qualitative analysis of diet. Participants were dichotomized in Early and Late eaters for the main meals using the median values of hours as the cut-off point. The eating frequency was defined as the number of times per day of food or beverage consumption with at least 5 kcal and a minimum difference of 60 minutes between each eating episode. Body composition and biochemical measurements were investigated. The percentage values of the body fat were significantly higher among women with consumption ≤ 4 eating episodes when compared to those that consumed >4 per day. Furthermore, the Late dinner time women had significantly lower plasma levels of high density lipoprotein (HDL-C) compared to those of Early dinner time. Significant effects of eating frequency were observed for quantitative intake of energy and macronutrients, however no effects of main meal timing. Regarding the quality of diet, positive associations were observed for Early women: for breakfast time to Whole Grains; Milk and Dairy Products - for dinner time: to Calories from Solid Fats, Alcohol and Added Sugars and the Total BHEI-R score. The consumption ≥ 4 eating episodes was positively associated with consumption of Total Fruits, Whole Fruits, Meat, Eggs, and Beans and the Total BHEI-R score compared with women who consumed <4 per day. Therefore, late eaters and less eating frequency presented dietary patterns of lower quality, worse physical, and biochemical measurements, that could have an adverse impact in the health of women in endocrine treatment.

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BILATERAL BREAST RECONSTRUCTION SURGERY: ECONOMIC PERSPECTIVES AND IMPLICATIONS ON THE QUALITY OF LIFE OF PATIENTS SUBMITTED TO UNILATERAL BREAST CANCER MASTECTOMY

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Objective: Women with breast cancer (BC) can undergo breast reconstruction after mastectomy by the Unified Health System (SUS, acronym in Portuguese). New proposals intend to guarantee the right to perform mamoplasty of the autologous tissue seeking the symmetry of the breasts. The present work intends to discuss the consequences of this project in the economic scope for SUS and the quality of life for patients. **Methodology:** Data from the SUS Hospital Information System were used. Publications were searched on PubMed and BIREME platforms, using the descriptors bilateral breast reconstruction and breast cancer. **Results:** In a study carried out between 2002 and 2011 in a private clinic, the percentage of bilateral surgeries was 30% up to October 2007 and, from that period, passed to 84%. In the SUS, 8,884 reconstructive mammoplasties after mastectomy with prosthesis implantation were performed between 2014 and 2018, totaling an expense of 8,047,860.04 reais and 33 bilateral reconstructive mammoplasties with prosthesis implantation, totaling 59,553.56 reais. The last procedure was not performed on women undergoing mastectomy to remove malignant tumor, and aims to only design expenditures if they could, in the future, be performed in the SUS in patients with BC. The cost of bilateral breast reconstruction is higher, but knowing that the diagnosis of BC represents a negative psychological impact, bilateral breast reconstruction is an option to reduce the damage to the self-esteem and sexual life produced by mastectomy, since the woman will have greater symmetry between the breast and better aesthetic perception of these, especially without clothes. **Conclusion:** Despite higher expenses, bilateral breast reconstruction in CM, including autologous tissue, is characterized as a necessary procedure to be performed in the SUS, since the patient's physical and psychic health should be prioritized, so that future complications in the mental and sexual dimensions are avoided.

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QUALITY OF LIFE AND AESTHETIC SATISFACTION OF BREAST CANCER PATIENTS SUBMITTED TO NEOADJUVANT CHEMOTHERAPY AND SURGERY WITH OR WITHOUT IMMEDIATE RECONSTRUCTION

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Objective: Assessing quality of life (QoL) and aesthetic satisfaction of patients with breast cancer submitted to surgery with or without reconstruction. **Methodology:** It is a transverse study, with application of global and specific QoL questionnaires (WHOQOL-BREF and BREAST-Q) in patients submitted to surgery with and without immediate reconstruction in Hospital do Câncer Aldenora Bello (HCAB), São Luís - MA. Non-parametric Mann-Whitney test was used to check for an association between scores. Spearman's correlation coefficient was used to evaluate scores and numerical variables of BMI and time of surgery. Significance level of 5% was adopted. The patients were selected from January 2013 to May 2017. The questionnaires were applied from August to December 2017. **Results:** 60 patients represent the population of the study, being 32 in reconstruction group (group 1), and 28 in no reconstruction (group 2). The average time between surgery and the application of questionnaire was 19,4 months (6 to 44) in group 1 and 25.7 months (6 to 47) in group 2. Group 1 patients are younger (41.3x49.7 years, $p=0.001$) and with lower BMI (25.05x29.67, $p=0.023$). Reconstructed patients present better QoL in physical well-being domain (70.0x60.6, $p=0.027$), surgeon (98.4x88.9, $p=0.003$) and assistant surgeon (97.7x90.7, $p=0.006$) with BREAST-Q. In group 2, there's a negative correlation between BMI and breast satisfaction ($p=-0.3279$). Negative correlation also has been observed between time of surgery and breast satisfaction ($p=-0.4572$), and time of surgery and sexual well-being ($p=-0.3735$), in group 2. In group 1, there are positive correlations between time of surgery and sexual well-being ($p=0.3405$). **Conclusion:** Patients submitted to immediate reconstruction present greater physical well-being and satisfaction with surgeon, being younger and with lower BMI. The absence of reconstruction is correlated with worse breast satisfaction and sexual well-being with time.

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ANALYSIS OF THE PREVALENCE OF THE C.156_157INSALU PATHOGENIC VARIANT IN BRCA2 GENE IN CENTRAL BRAZIL PATIENTS WITH SUSPECTED HEREDITARY BREAST AND OVARY CANCER SYNDROME (HBOC)

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The pathogenic variant c.156_157insAlu has a founding effect in Portugal, accounting for half of the cases of hereditary breast cancer in the country, and has been appearing frequently in studies conducted in Brazil. Considering the absence of published data on the frequency of the *BRCA2* variant for the Midwest region of the country and the importance of Portuguese colonization for the genetic composition of the Brazilian population, the present study aimed to identify the prevalence of variant c.156_157insAlu in the *BRCA2* gene in patients with breast cancer in a population from Central Brazil. We evaluated 100 patients with breast cancer who met NCCN criteria for HBOC syndrome and who were treated at the Advanced Center for Breast Diagnosis at Clinical Hospital, UFG. 4 mL of blood was collected for DNA extraction, which was then submitted to the PCR technique for exon 3 of the *BRCA2* gene and then performed on agarose gel electrophoresis (2%). Then, the samples that showed amplification for the variant studied were sent for Sanger sequencing in ABI3730 Genetic Analyzer apparatus for confirmation of the presence of the Alu insert and the MLPA test using the SALSA MLPA P045 *BRCA2/CHEK2* kit from lot C1- 0416. Only one patient (1%) presented variant c.156_157insAlu in exon 3 of the *BRCA2* gene. The patient was female, had invasive ductal carcinoma of the luminal A subtype, diagnosed at age 41 with a family history of breast, lung, liver, throat, pancreas and intestine cancer, sarcoma, Hodgkin's lymphoma and melanoma. Our results suggest that, despite the low incidence observed, the c.156_157insAlu variant in exon 3 of the *BRCA2* gene should be screened for all patients in the Midwest region of Brazil with suspected HBOC syndrome, as well as the study of their relatives.

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INSTRUCTION LEVEL AND SKIN COLOR EXPRESSED IN MAMMOGRAMS IN THE STATE OF GOIÁS IN 2013

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Objectives: The objective of the present study is to compare the level of training in self-reported white, black or brown women in the mammograms performed in Goiás during the year 2013. **Methodology:** This is an exploratory, quantitative study which database is the Breast Cancer Information System (SISMAMA) in 2013, in Goiás, Brazil. Only women, of any age, were grouped into three groups: white, black, and brown, as they declared themselves. 257 were self-declared yellow and there was no indigenous record that year. Afterwards, they were subdivided according to the level of education. **Results:** Of the 51,797 women who underwent mammography in 2013 in Goiás, 8.7% declared themselves white, 1.1% black and 30% brown. As for white women (4,537), except those who did not report their level of education, 52% had finished high school. As for black women (571), 61% of those who performed uni or bilateral screening mammograms and reported their graduation had not finished elementary school, and of the total number of women, 67% had incomplete elementary school, following this same selection criterion. **Conclusion:** Screening by mammography is the main means of early detection for the diagnosis of malignant neoplasms of the breast, one of the main causes of death in Brazil. It is known that the level of education of the population interferes in a significant way in the search for medical care and health care. Added to this, skin color is also related to schooling, social participation, and, consequently, individual access to health services. The data obtained in SISMAMA confirm this situation in the state of Goiás, with figures showing a higher level of training of white women who underwent mammography (full secondary education) in comparison with self-reported black or brown women, whose most prevalent level of schooling was elementary school incomplete.

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CLINICAL AND MOLECULAR EVALUATION OF MICROCALCIFICATIONS CLASSIFIED AS BIRADS® 4 AND 5

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Breast cancer is the most recurring type of cancer amongst women, with reduced mortality at an initial stage of lesion. From a radiological perspective, perceived microcalcifications may be associated with histological findings such as proliferative injuries with or without atypical features, and Ductal Carcinoma *In Situ*. Currently, percutaneous and vacuum biopsies allow for the correlation between anatomoradiological and identification of previous lesions and those that offer the risk of cancer. No biomarker has been established to predict cancer in women diagnosed with benign mammary disease, and identifying it could strengthen the possibility of stratifying the individual risk of benign injuries for cancer. The platelet-derived growth factor receptor A (PDGFRA) plays its part in tumor oncogenesis, angiogenesis, and metastasis, and its activation is found in some kinds of cancer. On the other hand, DNA methylation standards are initial changes to the development of cancer and may be helpful in its early identification, being regulated by a family of enzymes called DNMTs (DNA methyl transferase). The aim of this study was to evaluate the profile of BI-RADS 4 and 5 mammary microcalcification women carriers and determine the level of the gene expression of possible molecular markers in 37 patients with mammary microcalcification (paraffin blocks), and 26 patients with breast cancer (fresh in RNAlater tissue) cared for at the Hospital Barão de Lucena's Mastology Ambulatory. Anatomoradiological aspects have been evaluated together with clinical findings, and percentage rates have been calculated. The PDGFRA and DNMTs (DNMT3a) gene expressions have been established by means of quantitative PCR (qPCR), with the use of actin as reference gene. Among the patients with mammary microcalcification, the average age was 55.9; predominantly white-skinned subjects, ($p < 0.014$). Most of them were mothers ($p < 0.001$), breastfeeding ($p < 0.001$), and the average menarche age was 13. The subgroups that presented greater significance were patients classified BI-RADS® in category IV (67.6%) and histological findings of non-proliferative lesion ($p < 0.001$). Lesions of the Ductal Carcinoma *In Situ* type (100%) presented positive Estrogen and Progesterone receptors, and 94.6% have undergone sectorectomy surgery by prior needling ($p < 0.001$). The most damaged breast was the left one (62.2%), and the most affected quadrant was the top lateral one, 59.5% ($p < 0.001$). There was no family history in 83.8% of the cases. In the tested microcalcification samples, it was not possible to observe the expression of PDGFRA. Nevertheless, 15 of 37 patients with microcalcification showed increase in the gene expression of DNMT3a, most of them greater than Luminal and Triple Negative cancer types. The data presented here highlights the improvement on the description of BI-RADS 4 sub-classification in order to better conduct the clinical decision. Data also demonstrated the potential of DNMTs evaluation in microcalcification samples as a strategy to access the understanding about the role of these molecules in the breast cancer development.

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PATIENTS WITH BREAST CANCER: CHANGES IN BODY IMAGE

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Objectives: To describe the major changes related to body image triggered by breast cancer. **Methodology:** The study consists in a literature review, conducted between March of 2016 and March of 2019, through a research of scientific articles and editorials in the SciELO and Bireme databases, from Medline and Lilacs with the descriptors “breast”, “cancer”, “body”, and “image”. **Results:** The changes brought by breast cancer in the body image are present not only when the woman needs to withdraw the breast, but also in other forms of treatment of the disease. In the mastectomy, the main changes are the body asymmetry, the visual perception, and the imbalance in the distribution of weight. As for radiation therapy, the main change is in the skin texture. In regard to chemotherapy, there may be induced menopause and alopecia. Hair loss affects a woman’s identity and safety, as well as triggering the privacy of those facing cancer treatment. The body changes caused by this condition are present even when the organ is rebuilt, as often women do not recognize it as an integral part of their body, requiring some time to adapt to it. **Conclusion:** Breast cancer is probably one of the most feared by women, which is very much related to the distortion of the body image that this disease causes, affecting the most representative organ of femininity. The body image is a complex mechanism of construction of personal identity, being therefore related to psychic aspects and social relations. Breast cancer causes many changes in body image, involving physical, psychological, and social aspects related to the well-being of the patient facing cancer and, consequently, the effectiveness of the treatment and the overcoming of the disease.

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PREVALENCE OF TP53 P.R337H MUTATION IN BRAZILIAN BREAST CANCER PATIENTS: A SYSTEMATIC REVIEW OF THE LITERATURE

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Introduction and objectives: Inherited breast cancer accounts for 5 to 10% of all breast cancer cases. In Brazil, a founding mutation TP53 p.R337H was described in the population of the South and Southeast of the country. The objective of this study was to evaluate the frequency and clinical implications of the TP53 R337H mutation in women with breast cancer in the Brazilian population, through a systematic review of the literature. **Methods:** The studies were selected from the NCBI (PubMed) database, using the descriptor “TP53 p.R337H”, selected in Health Sciences Descriptors. Titles, abstracts, and full papers were reviewed by three researchers in order to determine the relevance of the studies. Relevance criteria included: studies investigating the TP53 p.R337H mutation in Brazilian women; studies that investigated the TP53 mutation p.R337H and the risk of developing breast cancer; and studies that investigated the TP53 mutation p.R337H and the prognosis of breast cancer. **Results:** Six studies were included in the analysis and 1,660 Brazilian women were evaluated. Of these, 775 had breast cancer and 14 had the TP53 mutation p.R337H (1.80%). In the group of women who did not have breast cancer (n=885), seven women had the TP53 mutation p.R337H (0.79%). In total, 21 women had the TP53 p.R337H mutation. The frequency of the TP53 p.R337H mutation was 2.3 times higher in women with breast cancer (1.80%) compared to those without breast cancer. Only two women with the TP53 p.R337H mutation had other tumors besides breast cancer. Information regarding the prognosis of women with breast cancer, such as expression of hormone receptors, presence of distant metastases, lymph node involvement, or tumor size were scarce and could not be evaluated. **Conclusion:** The TP53 p.R337H mutation appears to be associated with a higher risk of developing breast cancer, however more studies are needed to investigate the frequency of this mutation in different regions of the country, as well as to establish its relation with the prognosis of breast cancer.

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THE EARLY DETECTION OF BREAST CANCER THROUGH SELF-EXAMINATION IN THE BASIC HEALTH CARE IN GOING FROM GOIANIA BETWEEN 2017/2–2018/1

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Objectives: The objective of this study was to determine the early detection of breast cancer during the breast cancer screening process in the city of Aparecida de Goiânia (Jardim Tiradentes, Jardim Florencia, and Jardim Boa Esperança). Teaching-learning of medical students through the PINESF (Integrated Program of Studies in Family Health, acronym in Portuguese). **Methodology:** Through PINESF, educational lectures were conducted with the theme: “Breast cancer: prevention is the secret, touch up”, at UBS (Basic Health Unit, acronym in Portuguese) of Aparecida de Goiânia between 2017/2 and 2018/1. They then proceeded to collect data on the early detection of breast cancer through self-examination by means of lectures. **Results:** It was found through the data collection of the team that 385 women participated in the instructions offered through the lectures held at the UBS, with demonstration of how to perform breast self-examination and when to seek care. Of these 385 women participants, 125 sought the UBS with supposed alterations of the self-examination. However, of the 125 who sought UBS, 64 women were sent to referral hospitals for specialist consultations and follow-up (mammography, clinical examination, histopathological study, among others) if necessary, and the remainder were followed up at UBS. Therefore, of the 64 women referred to the most complex service, 15 had a diagnosis of ductal carcinoma in situ, 5 of invasive ductal carcinoma, and 2 of lobular carcinoma in situ, while the rest of the women gave up and / or are still under follow-up. **Conclusion:** It was concluded that self-examination of the breasts is well conducted by correct techniques and adequate clinical support is a predictor of the diagnosis of breast cancer in primary / primary health care. Therefore, with the early diagnosis of breast cancer 95% of the cases have a possibility of cure and / or reduction of aggressiveness.

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PRODUCTION OF LIPID-CORE NANOCAPSULES CONTAINING LYCOPENE-RICH EXTRACT FROM RED GUAVA (*PSIDIUM GUAJAVA* L.) WITH CYTOTOXIC ACTIVITY IN BREAST CANCER CELLS

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This study aims the development and characterization of lipid-core nanocapsules carrying lycopene-rich extract from red guava (LEG), and evaluating its cytotoxic activity in human breast adenocarcinoma cells (MCF-7). LEG was obtained from mature fruit (500g) by extraction with ethanol and characterized by UV-Vis spectrophotometry and high performance liquid chromatography. Lipid-core nanocapsules containing LEG (nanoLEG) were produced by interfacial deposition of the preformed polymer method. A control formulation without extract (empty nano) was produced. NanoLEGs were characterized by Dynamic Light Scattering (DLS), Polydispersity Index (IPD), Zeta Potential (ZP), pH, Encapsulation Efficiency, Nanoparticle Trace Analysis (NTA), Atomic Force Microscopy (AFM), and Transmission Electron Microscopy (TEM). Cell viability was evaluated by MTT (3-[4,5-dimethylthiazol-2-yl]-2,5-diphenyltetrazolium bromide) dye reduction method in MCF-7. The hemolytic activity assay was carried out spectrophotometrically in sheep blood. Variance analysis and Bonferroni's test were applied at GraphPad Prism. UV-Vis and chromatographic analysis revealed the presence of lycopene in the extract. DLS, NTA, PDI, ZP, and pH data from nanoparticles shown polydisperse samples, average sizes around 200 nm, negative surface charge, and pH <5.0, with unexpressive variation during the storage period (90 days), indicating stability of the system. The percentage of encapsulation was similar between formulations, varying from 95 to 98%, suggesting that LEG was efficiently encapsulated. The micrographs by AFM and TEM revealed spherical shape and heterogeneous distribution of sizes. NanoLEG significantly reduced ($p < 0.05$) the viability of MCF-7 after exposure for 24 and 72 hours from the lowest concentration (6.25 to 200 $\mu\text{g}/\text{mL}$). NanoLEG did not affect the viability of sheep blood erythrocytes at the concentrations tested (6.25 to 200 $\mu\text{g}/\text{mL}$), indicating biocompatibility in the normal cell model used. Thus, lipid-core nanocapsules carrying lycopene-rich extracts from red guava can be a promising alternative in applications against breast cancer.

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EPIDEMIOLOGICAL REVIEW OF SURGICAL PROCEDURES PERFORMED IN MALIGNANT HISTOPATHOLOGICAL FINDINGS IN BRASÍLIA, CAPITAL OF BRAZIL

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Objectives: This study aims to estimate the surgical procedures used to approach hystopal lesions with malignancy in women, according to the age group, in the city of Brasilia during the period from September 2009 to July 2015. **Methodology:** This study was carried out through research in the country's unified health system (SUS, acronym in Portuguese) database, SISMAMA tabnet. **Results:** Age groups ranging from 20 to over 70 years were selected in the mentioned period, generating a total of 1,103 surgical procedures performed. Women between the ages of 45-49 represent the age group with the highest number of procedures 17.31% (191) of the total, with Core Biopsy (CB) being the most common, 29.84% (57) the total and secondly the incisional biopsy with 9.2% (18). The second age group with the highest number of procedures is the one that includes women between 50-54 years of age with 15.23% (168) procedures, being CB also more prevalent with 33.92% (57), followed by incisional biopsy (IB) and simple mastectomy (SM), 7.14% (12). In third place, it stands out women between 60-64 years and those with more than 70, each age group responsible for 12.60% (139) cases, in both CB was the preferred form of approach with a total of 28.05% (39) and 39.56% (55) respectively, followed by IB 12.94% (18) and in women older than 70, the second procedure was the segmental resection 10.79% (15). **Conclusion:** There is a gap in the country's data system, since the most recent data are from 2015. With this we can conclude that the government needs to do a better approach to encourage corroboration with the data. After the epidemiological analysis, the highest number of malignant findings was observed in women aged 45 to 49 years, with the surgical approach being preferred to CB followed by IB.

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CASES OF BREAST CANCER IN GOIÁS BETWEEN SEPTEMBER 2009 AND FEBRUARY 2014 DIAGNOSED FROM ANATOMOPATHOLOGICAL EXAMINATION

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Objectives: To analyze the number of diagnosed breast cancer cases in women between 40 and 59 years old in the state of Goiás, Brazil, between September 2009 and February 2014. **Methodology:** This is a database search such as DATASUS (*Departamento de Informática do SUS*), INCA (Instituto Nacional de Câncer), and MS (*Ministério da Saúde*). **Results:** Breast cancer is a disease caused by the disordered multiplication of cells. This process generates abnormal cells that multiply, forming a tumor. It is the most common type of cancer among women in the world and in Brazil in the last 5 years. There are several types of breast cancer. The histological classification of breast neoplasms reflects the structural homogeneity of these tumors. Invasive Ductal cancer is the most common histological type (75%), followed by the Invasive Lobular carcinoma (15%). DataSUS presents epidemiological data that shows 1,284 histopathological breast examinations in women of ages between 40 to 59 years old, of all ethnic groups, of which 44.7% (572) found malignancy. The city in Goiás that has the highest rate of breast cancer is Goiânia, with 50% (288) of the cases described between September 2009 and February 2014. The cities of Aparecida de Goiânia and Valparaíso de Goiás respectively showed 4.7% (27) and 2.9% (17) of cases. The age group with the highest number of cases with breast cancer was between 40–45 years, with the percentage 33.7% (193). **Conclusion:** After the analysis described in this study, it is concluded that we must do screening and early diagnosis interventions to reduce the incidence of breast cancer in Goiás.

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COMPARING CONVENTIONAL BREAST CONSERVING SURGERY WITH THE MINIMALLY INVASIVE APPROACH TECHNIQUE TO TREAT EARLY BREAST CANCER - A RETROSPECTIVE CASE CONTROL STUDY

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Objective: The objective of the study was to compare the oncological safety and aesthetical results between the minimally invasive technique (MIT) and the conventional breast conserving (CBC) surgery. Breast conserving surgery was developed to avoid mastectomy and has become the standard of care in early stage breast cancer. Patient concerns with aesthetics have led to the development of oncoplastic surgical approaches. It has been demonstrated that the aesthetic success in breast cancer surgical treatment leads to improved sexual and social recovery. In patients that have no desire or no need for associated mammoplasty, minimally invasive treatments allow the maintenance of the breast pre-surgical appearance. The MIT is an oncoplastic surgery aimed to remove both the breast tumor and the sentinel lymph node through one incision, thus providing better aesthetic results than the CBC two incision technique. **Methods:** We retrospectively evaluated 2 cohorts of 60 consecutive early breast cancer patients (invasive breast cancer measuring no more than 25 mm and clinically axillary negative lymph nodes) operated by either CBC surgery (n=26) or one incision surgery (n=34). We selected patients that have no desire or no need for associated mammoplasty. We compared the mammary volume tissue removed; surgical time; number of dissected lymph nodes; surgical complications; and subsequent aesthetic sequelae. **Results:** In the MIT group the breast volume removed was significantly lower than in the CBC surgery group as well as was the surgical time and the number of dissected lymph nodes. No cases required enlargement of the margins and aesthetical results were better in the MIT group. **Conclusions:** The minimally invasive approach to treat early breast cancer was shown to be similar to the CBC surgery in terms of oncologic outcomes but providing better cosmetic result.

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IMPACT OF REFERENCE CENTER ON BREAST CANCER IN CAPITAL CITY

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Objectives: The purpose of this article is to review the impact of a reference center on breast cancer in the capital city of Goiás. **Methodology:** The search for articles related to the topic was carried out in platforms such as SciELO and PubMed using the descriptors: reference center, breast cancer, and capital. For the condition of choice, the period of publications of the articles used was 2009–2019. In addition, data from the National Cancer Institute (INCA, acronym in Portuguese) for the year 2018 were used. **Results:** In the analyzed articles, breast cancer corresponds to 20,828 surgeries, 37,000 hospitalizations, 831,759 chemotherapy procedures, and 43,939 radiotherapy sessions in Brazil. According to INCA's estimates for 2018, the incidence of breast cancer in women was 48.68% and 72.17%, respectively in Goiás and Goiânia. Thus, in addition to primary prevention, it is necessary screening this pathology through complementary tests (secondary prevention) to diagnose and early treatment, with the aim of reducing mortality. Mammography is the ideal exam for screening for breast cancer by allowing the detection of lesions in their early stages. **Conclusion:** Therefore, we see from these data that the presence of these increasingly specialized centers in large cities is fundamental, in order to have the best diagnosis and treatment of breast cancer. It was with this objective that the Advanced Breast Diagnostic Center was inaugurated in the Clinical Hospital of Federal University of Goiás in 2016. It has mammography and ultrasound equipment and is the first unit in Midwest to provide a mamotomy to patients of the Unified Health System. This device performs a biopsy, without having to go to the operating room, and decreases the diagnosis time and cost.

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EVALUATION OF METASTATIC STAGE PATIENT CHARACTERISTICS ATTENDED AT DR ARNALDO VIEIRA DE CARVALHO CANCER INSTITUTE

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Objectives: Evaluate the characteristics of metastatic stage patients attended at the Oncogynecology and Mastology Service (SOGM, acronym in Portuguese) of Dr. Arnaldo Vieira de Carvalho Cancer Institute (ICAVC) from 2006 to 2014, with follow-up until 2018. **Methods:** A descriptive, retrospective, longitudinal study was performed with patients with metastatic stage invasive breast carcinoma attended at ICAVC in São Paulo; data were analyzed on the database of Microsoft Excel®. **Results:** 339 patients were evaluated, of which 37 (12%) presented distant metastasis at some point in the follow-up, with a predominance of patients with tumors Stage III (32.4%), age under 70 years (81.1%) and luminal (83.3%). The majority underwent radical breast surgery (78.4%) and was not submitted to neoadjuvant chemotherapy (62.2 x 37.8%). Of the total of 37 patients with evolution with distant metastasis, 78.4% did not present a local recurrence and, in relation to metastasis sites, the majority presented metastasis to bone (64.9%); of these, 62.5% were luminal and only 8.3% triple negatives. Of the 37 patients, 7 (19%) remain alive, in outpatient follow-up; of these, 57.1% are of the luminal subtype. **Conclusion:** The mean follow-up time between diagnosis and the onset of the first metastasis was approximately 29 months. The luminal subtype was shown in this study as the subtype with better results in absolute numbers in terms of metastatic disease survival, showing that the subtype of breast cancer influences the results of patients. When evaluating the prevalence of the distant metastasis site, bone metastasis proved to be the most common site, which is consistent with the data in the literature.

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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 2014

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Objectives: Evaluate the characteristics of the patients with Luminal B breast cancer submitted to neoadjuvant chemotherapy, attended at the Oncogynecology and Mastology Service (SOGM, acronym in Portuguese) of Dr. Arnaldo Vieira de Carvalho Cancer Institute (ICAVC) from 2006 to 2014. **Methods:** A descriptive, retrospective, longitudinal study was performed with patients with invasive breast carcinoma attended at ICAVC in São Paulo; data were analyzed on the database of Microsoft Excel[®]. **Results:** 339 patients were evaluated, which 92 (27.1%) presented breast neoplasm with compatible immunohistochemistry with luminal B tumors; of these, 23 (25%) were submitted to neoadjuvant chemotherapy, 4 (17.4%) presented pathological complete response (pCR), both mammary and axillary, 2 (8.7%) patient presented distant metastasis for bone and 1 (4.3%) of them had local recurrence. The overall mean survival was 12 years and the disease-free survival was 5 years. **Conclusion:** The pCR was 17.4% in patients with luminal B tumors seen in our service, with high overall survival rates due to the possibility of adjuvancy with hormonal block, which is consistent with the data present in the current literature regarding the prognosis of such patients.

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PROGNOSTIC EVALUATION OF PATIENTS WITH TRIPLE NEGATIVE IMMUNOPHENOTYPE, SUBMITTED TO NEOADJUVANT CHEMOTHERAPY ATTENDED AT THE ONCOGINECOLOGY AND MASTOLOGY SERVICE OF DR ARNALDO VIEIRA DE CARVALHO CANCER INSTITUTE

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Objectives: Evaluate the characteristics of patients with triple negative (TN) submitted to neoadjuvant chemotherapy attended at the Oncoginecology and Mastology Service (SOGM, acronym in Portuguese) of Dr. Arnaldo Vieira de Carvalho Cancer Institute (ICAVC) from 2006 to 2014. **Methods:** A descriptive, retrospective, longitudinal study was performed with patients with invasive breast carcinoma attended at ICAVC in São Paulo; data were analyzed on the database of Microsoft Excel®. **Results:** 339 patients were evaluated. Among them, 32 (9.4%) presented TN breast neoplasm by the immunohistochemical study; 40.6 % of them underwent neoadjuvant chemotherapy, having as main regimens the association of anthracycline and taxane; 7.6 % presented pathological complete response (pCR) and 38.4% evolved with distant metastasis; being the disease free survival and mean global survival of 3 years. **Conclusion:** With this study, we observed 9.4% of triple negative tumors that, differently from the literature, presented the small complete pathological response index of only 7.6%.

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DUCTAL CARCINOMA IN SITU OF THE BREAST: FIRST ANALYSIS OF 167 CASES

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Objectives: Ductal carcinoma in situ (DCIS) of the breast represents a heterogeneous group of neoplastic lesions confined to the ducts and lobules of the breast, which differ in histological grade and biological potential. As the principal finding is microcalcifications, the presence of DCIS is more frequent in populations that are submitted to mammography screening. This condition is usually treated with local surgery and adjuvant radiotherapy. The use of sentinel node biopsy is reserved for large tumors when the risk of invasion is higher and in radical surgeries. **Methodology:** We have performed a retrospective analysis of 157 cases of DCIS diagnosed by percutaneous biopsy treated in our institution between 2011 and 2013. All the patients had an initial biopsy and had a definitive surgery in our hospital. We have initially reviewed the age, grade, the presence of necrosis, type of surgery, and the presence of axillary staging by sentinel node biopsy (SNB) or axillary sampling (AS). **Results:** From 167 cases we saw 18 cases that initially were diagnosed as DCIS, but were confirmed to be invasive after surgery. Most of our population were more than 50 years old (64%). Interestingly 30% of our patients were between 40–49 years, a range that is not contemplated in the program of mammographic screening determined by the National Cancer Institute (INCA). Most of our patients were treated with partial mastectomy (70%) and radical surgery in 30%. In 9% of the cases, a AS was performed and, in 20%, SNB was performed. There was no lymph node positive in our analyses. **Conclusion:** DCIS is an important disease and our data showed that the prevalence in the range age 40–49 is high and the INCA screening programme should be reviewed. The use of axillary staging should be discouraged for DCIS.

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COULD PRIMARY TUMOR RESECTION IMPROVE SURVIVAL IN METASTATIC BREAST CANCER?

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Objective: Resection of the primary tumor in metastatic breast cancer is controversial in literature. Some evidence have suggested that women who undergo resection of the primary metastatic breast cancer achieved improved survival outcomes. The objective of this study is to evaluate the impact of primary tumor resection (PTR) in patients with metastatic breast cancer. **Methodology:** Literature review. We performed our search in the following databases: Medical Literature Analysis and Retrieval System Online (MEDLINE), Wiley Online Library, Scopus, and PubMed Central (PMC). Eight studies from 2016–2019, including randomized controlled trials, meta-analysis, and systematic reviews were selected. **Results:** Although there are some polemic opinions about the surgical treatment, the latest studies that we have analyzed emphasized that PTR is associated with better prognosis in women with metastatic breast cancer. In most studies, it was reported in literature that progression-free survival (PFS) is better on those who underwent surgery. In addition, primary tumor resection has been reported to be associated with longer progression-free survival at a distance (Hazard Ratios 0.42). Improved survival was even associated with surgery regardless of tumor size. An expert group of oncologists from India came to a consensus that surgery for primary tumor should be done in patients with oligometastatic breast cancer. A similar conclusion was reached by a research group in Mexico, who suggest that PTR has a positive impact on women PFS and borderline overall survival, particularly benefiting those with oligometastatic disease. Primary tumor resection was also associated with a longer median overall survival (OS). On a study conducted in USA, which included 29,916 patients with metastatic breast cancer, 15,129 (51%) underwent primary tumor resection, and 14,787 (49%) patients did not undergo surgery. OS achieved was 34 vs 18 months, in favor of surgical patients. A retrospective cohort study in USA registered survival of at least 10 years seen in 9.6% (n=353) and 2.9% (n=107) of those who did and did not receive surgery, respectively. Additionally, those undergoing surgery had longer median survival than those who did not (28 months vs 19 months). In women with *de novo* stage IV breast cancer, current studies show that surgical resection of the primary tumor occurs in almost half of those alive 1 year after diagnosis. However, we acknowledge that there are considerable discussions about the selection of patients, since most studies are likely to choose those with good status performance. **Conclusion:** The primary role of local treatment to the breast in metastatic breast cancer is palliation. Patients with metastatic disease should be evaluated for possible local management of the primary if it may control local complications from the cancer (e.g. bleeding, infection, or wound management). Based in the analysis, primary tumor resection in metastatic breast cancer is associated with higher survival rates, when compared to not surgical groups. We suggest a new approach to annul the possible selection bias in studies.

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THE RELATIONSHIP BETWEEN PHYSICAL ACTIVITY AND BREAST CANCER: PREVENTION, TREATMENT AND RECONSTRUCTION OF SELF-ESTEEM

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Objective: It is known that a physical activity promotes the balance of hormone levels, strengthens the body's defenses, and helps the maintenance of adequate body weight. Therefore, it contributes to prevent various types of cancer, including breast cancer. In this perspective, the present work seeks to understand the relationship between physical activity and Breast Cancer. **Methodology:** This study was searched on PubMed, SciELO, Lilacs for relevant publications. The keywords used were "breast cancer" AND "exercise" AND "prevention" AND "treatment". **Results:** Fatigue on cancer causes decrease in quality of life and in daily functional capacity of patients. To escape more drugs, a physical activity appears with the best benefit to eliminate this symptom and to increase the disposition of the patients. The impact on self-esteem is in the discovery of overcoming. It also helps control weight and reduce swelling caused by the use of corticosteroids in chemotherapy. Group physical activities promote the patient's interaction with other people, facilitating distraction from the disease. About the prevention, according to researches there was a 25% average risk reduction amongst physically active women as compared to the least active women. The production of estrogen by adipose tissue can be one of the reasons: the more fat the body has, the more of that hormone will be produced. The cancer cells use the substance as a fuel, since it acts on the mammary cells. Another hormone is insulin, that induces the multiplication of cells, so once the cancer starts, having high levels of insulin in the blood becomes dangerous, and exercising decrease the amount of that substance in the body. **Conclusion:** There is no doubt about the importance of practicing physical activities regularly. In addition to contributing to the prevention, treatment and recovery of self-esteem in patients with breast cancer, physical exercises have other health benefits, and their insertion into our routines is indispensable.

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ACCESSIBILITY TO BREAST CANCER TREATMENT AND BARRIERS TO HEALTH ASSISTANCE

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Objective: Despite developed countries having the highest incidence rates of breast cancer (BC), mortality rates are higher in developing countries, due to late diagnosis and difficulties to accessing care. This study aimed to evaluate the access to BC treatment in Brazil. **Methodology:** This is a narrative, exploratory, and qualitative review of the accessibility to BC treatment. The search for articles happened on platforms SciELO and Scholar. The period of publications was from 2009 to 2019. The descriptors were: accessibility, treatment, and breast cancer. **Results:** Accessibility is essential in the prevention and treatment of BC, but this is not the current Brazilian reality. Since 2011, 20,828 surgeries and 37,000 hospitalizations were performed by *Sistema Único de Saúde*. However, almost 40% of the total is concentrated in seven capitals, São Paulo, Rio de Janeiro, Belo Horizonte, Porto Alegre, Curitiba, Salvador, and Fortaleza. Some capitals, such as Recife, Porto Alegre, Belo Horizonte, and Curitiba, showed a predominance of non-resident attendances, respectively, of 71.4, 60, 53.7, and 50.7%. The mean distance traveled was 67 km, evidencing a geographical barrier making treatment continuity difficult. In a survey of barriers in health care to BC, conducted with 58 women, treatment period was referred to as the main obstacle, totaling 23. Then, a total of 22 reported organizational barriers, including the waiting list for consultation, exams and treatments, and the error of diagnosis. In their view, those responsible for these events were the hospital and the Municipal Secretaries or Health System. Finally, the lack of information about the disease and economic barriers were reported. **Conclusion:** It is necessary to prioritize public policies that guarantee access to early diagnosis and treatment. Such measures should increase the survival and guarantee smaller losses in the quality of life. In addition, they can reduce more expensive treatments resulting from tumor progression.

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THE IMPORTANCE OF EARLY DETECTION OF DEPRESSION IN POST-MASTECTOMY PATIENTS

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Objective: Alert about the underdiagnosis of depression in post-mastectomy patients due to breast cancer and the type of procedures for their screening. **Methodology:** This is a qualitative, explanatory study of the literature. A search for articles on the SciELO and PubMed platforms was conducted. The descriptors used were: self-care, breast cancer, mastectomy, scales, depression, screening. **Results:** With the increase in breast cancer survival, the current challenge is to evolve into the existing sequelae of treatment. From lymphedema, local pains, loss of appetite, and mainly conflicts with the concept of beauty of contemporary society. In this context, many patients suffer from self-acceptance and social stigma, losing interest initially in appearance and, at a later stage, apathy affects all behaviors and this is the beginning of a possible depressive scenario. This situation significantly diminishes the quality of life of these patients and it is necessary that the medical staff has attention to the diagnosis. There are some internationally certified scales that can be used in routine consultation such as early screening for depression and diagnostic help. Among the screening scales, the following stand out according to the literature: Hamilton Depression Rating Scale; Beck II depression inventory (IDB-II); Patient Health Questionnaire-9. Especially the IDB-II, a scale already used in terminal patients and carriers of chronic diseases may have greater applicability in these patients. However, the focus is that all medical staff have training and can use these tools in routine outpatient visits as a form of early screening. **Conclusion:** In addition to low-cost scales, they have high reproducibility. Many other tools can be used, however the focus of this work is to alert to the use in the routine consultation of these patients. With this, the quality of life is improved with low operational cost.

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EXPOSURE TO ENDOCRINE DISPERSERS AND XENOESTROGEN IN THE DEVELOPMENT OF BREAST CANCER: A LITERATURE REVIEW

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Objectives: To discuss the impact of endocrine disruptors (ED) on the human organism and the role of xenoestrogens in the development of breast cancer. **Methodology:** This is a qualitative literature review using PubMed, SciELO, and LILACS articles, in English, Spanish, and Portuguese, from 2014 to 2019. Case-control, sectional, and cohort studies of a total of 31 were included. **Results:** Xenoestrogens, disseminated by plastics, water, and food, are potentially harmful to women's homeostasis. They generate mutations and free radicals that cause DNA damage, increased phosphorylation of protein kinases, and activation of transcription factors, such as AP-1, NRF1, E2F, and CREB, bases of cancer by estrogens. They have been accused as potent mitogens, progressing the cycle from G1 to S phase, destabilizing DNA, and decreasing apoptosis. Bisphenol A (BPA) is one of the leading ED related to breast cancer. It is an estrogen receptor agonist (ER) and is hypothesized to be proinflammatory, stimulate cells via activation of iRhoms / ADAM17 or ADAM / 10, and induce expression of HOTAIR in breast cancer cells (MCF-7). There are several studies on the mechanisms by which neoplastic mammary cells overexpress ER- α 36, as it induces drug resistance in treatment and mediates xenoestrogens, inducing different responses in other ER. Although carcinogenic, there are EDs with effects on the reduction of T-cell and B-cell lymphomas in experimental analyzes. Some of the phytoestrogens class are agonists and inhibit the proteasome, which can prevent ER + neoplasms. **Conclusions:** Human bioaccumulation by xenoestrogens causes changes in physiological, hormonal processes, and corroborates the tumor genesis, among them breast cancer. However, some may perform anti-carcinogenic actions. Given the above, it is fundamental that new studies are carried out in order to clarify in more detail the deleterious effects and eventual benefits of EDs, to stimulate the prevention and / or correct use of them.

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IMPLICATIONS OF ALTERNATIVE TREATMENT IN BREAST CANCER

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Objectives: The objective of this work is to correlate the development of breast cancer, alternative forms of treatment, and patient improvement. **Methodology:** It is based on a systematic review of 2018 and 2019 PubMed and Google Scholar databases. The keywords “Breast Neoplasms”, “Complementary Therapies”, “Drug Therapy”, and “Plants, Medicinal” were used. **Results:** The unconventional therapies, more known as Complementary and Alternative Medicines (CAM), have become increasingly popular in patients with breast cancer. Fruit extract of graviola (IL-GFE), a metabolite called Annonaceous acetogenins (AAs) that has antiproliferative effect against breast cancer cell lines. The mechanism observed in MCF-7 cells (most recurrent adenocarcinoma among women) consists of an intrinsic apoptotic pathway. In addition to inhibit proliferation, its GFE also inhibits the metastasis process. On the other hand, the combined use of tamoxifen and bioactive compounds of *Strobilanthes crispus* showed strong inhibition to the cell lines MCF-7 and MDA-MB-231 to break the transmembrane potential of these cells and induce a marked apoptosis. **Conclusion:** From the data exposed, it is concluded that, currently, the combination therapy has become the hallmark of the breast cancer treatment because of the high incidence of tumor recurrence and progression of the disease after monotherapeutics treatments, including surgery, radiation therapy, hormonal therapy, and chemotherapy. Besides, the association of these alternatives present extra mechanisms on containment, eradication, and remission of the disease, with a greater effectiveness of treatment when compared to traditional monotherapy.

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ELASTOGRAPHY: THE IMPACT OF THE USE OF THE TOOL FOR THE CHARACTERIZATION OF BREAST LESIONS

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Objective: Elastography is a technology that evaluates the rigidity of tissues. The aim is to validate its use in combination with USM to improve the characterization of breast lesions, increasing the specificity of the method and, thus, targeting lesions more accurately for biopsy. **Material and method:** Four patients with lesions category 3, 4 and 5 BI-RADS®, less than 2 cm, with a mean age of 47 years, were evaluated with USM and elastography. The results were confronted with the histopathological, considered gold standard. The USM equipment was GE Logic 7 Expert, with strain elastography technology, and the resistance criterion described in the associated findings chapter of BI-RADS®, soft or rigid was used. **Results:** 17 rigid and 13 soft (0 malignant) 3 - 4 nodules were found; 24 category 4 A - 5 rigid (5 benign) and 19 soft (19 benign); 27 category 4 B - 13 rigid (2 malignant and 11 benign) and 14 soft (12 benign and 2 malignant); 26 category 4 C - 20 rigid (13 malignant and 7 benign) and 6 soft (5 benign and 1 malignant); and 10 category 5 - 8 rigid and 2 soft (10 malignant). Sensitivity 82%, specificity 65%, PPV 46%, and VPN 90%. **Conclusion:** Elastography is a tool that, despite being a dependent operator, can improve the characterization of breast lesions, making a more precise indication of procedures. **Keywords:** elastography, breast cancer, percutaneous breast biopsy.

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IMPACT OF SILICONE IMPLANT OR SALINE EXPANDER AND CONTRALATERAL SYMMETRIZATION IN QUALITY OF LIFE OF PATIENTS SUBMITTED TO IMMEDIATE RECONSTRUCTION

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Objectives: Assessing Quality of Life (QoL) and aesthetic satisfaction of patients with breast cancer submitted to surgery with immediate reconstruction using silicone implant or saline expanders, with or without contralateral symmetrization. **Methodology:** It is a transverse study, with application of global and specific QoL questionnaires (WHOQOLBREF and BREAST-Q) in patients submitted to surgery with post-mastectomy reconstruction in Hospital do Câncer Aldenora Bello (HCAB), São Luís – MA. The nonparametric Mann-Whitney test was used to check for an association between scores. The significance level of 5% was adopted. The patients were selected from January 2013 to May 2017, being the questionnaires applied from August to December 2017. **Results:** 32 patients had reconstruction and 24 (75%) had post-mastectomy reconstruction. Eleven (45.8%) patients were submitted to saline expander reconstruction and 13 (54.2%) had silicone implant reconstruction. Ten (41.7%) patients had immediate contralateral symmetrization. The analyses using BREAST-Q showed that patients with silicone implant reconstruction had greater breast satisfaction (76.5x54.4, $p=0.020$). Although it does not show statistical difference, silicone implant reconstruction tends to have better QoL on psychosocial domain (86.5x74.2, $p=0.237$), sexual well-being (55.5x52.5, $p=0.675$) and physical well-being (73.2x63.4, $p=0.269$). The impact of symmetrization on QoL using WHOQOL-BREF does not have statistical significance, being greater on symmetrization group (87.5x75.9, $p=0.168$). The analyses with BREAST-Q demonstrate that symmetrization causes better QoL related to satisfaction with breasts (79.5x57.0, $p=0.022$), psychosocial well-being (91.5x73.2, $p=0.037$), chest well-being (82.4x58.9, $p=0.002$), and quality of information (97.0x68.0, $p=0.007$). Patients submitted to symmetrization trends to have better sexual well-being (65.1x46.9, $p=0.063$). **Conclusion:** Patients submitted to immediate reconstruction with silicone implants presents greater breast satisfaction. Contralateral symmetrization is related to greater satisfaction with breasts, psychosocial well-being, and chest well-being.

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IMPORTANCE OF THE TRIPLE TEST AND FREQUENCY OF BREAST CANCER IN WOMEN SUBMITTED TO THE EXEMPTION OF BREAST NODE

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Objective: To establish the importance of preoperative diagnostic exams in breast nodules. **Methodology:** A retrospective, descriptive, cross-sectional study was carried out through the selection of medical records of women submitted to breast node excision at HMDI (Hospital and Maternity Dona Iris) between January 2016 and December 2017. **Results:** Maternity in the mastology outpatient clinic, being selected only those patients who underwent breast node excision, totaling 121 cases. Of these patients, 48 (39.7%) were between 15 and 25 years old. The triple test was performed in 60% of patients, and the results were respectively: 41 (56.2%) benign, 21 (28.8%) suspects and 11 (15.1%) malignant. The anatomico-pathological ones, 108 (89.3%) were diagnosed as benign breast diseases and 13 (10.7%) were diagnosed as breast cancer. 72.7% had a fibroadenoma diagnosis with the highest prevalence in the group aged 15-35 years. No nodules were diagnosed as malignant in the 15-25 age group, all of them fibroadenoma. There was 1 case of breast cancer in the age group of 26 to 35 years; there were 4 cases in the 36 to 45 years, and 8 cases in the over 46 years. An important finding is that only 10 patients (13%) of the age group up to 35 years had nodules smaller than 2 cm and ultrasound was not suspected, and surgery was not indicated. **Conclusion:** The importance of preoperative diagnostic tests in breast nodules is to predict benignity or malignancy. The triple test showed diagnostic excellence. The prevalence of breast cancer was 10.7%. The accuracy of the triple test was 94.9%, and the sensitivity of 100%. The most common histological finding was fibroadenoma.

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MOLECULAR PROFILE AND PATHOLOGICAL RESPONSE AFTER NEOADJUVANT CHEMOTHERAPY IN PATIENTS UNDERGOING SURGERY FOR BREAST CANCER IN THE MASTOLOGY UNIT OF THE HOSPITAL DE BASE DO DISTRITO FEDERAL BETWEEN 2014 AND 2016

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Breast cancer is a heterogeneous entity regarding clinical presentation and biological behavior. Prognostic and predictive factors have been investigated to guide best strategy for therapeutic approach. Neoadjuvant chemotherapy (NC) is gaining ground in primary treatment of breast cancer and the complete pathological response (pCR) to this therapy is prognostic marker. **Objectives:** Detect tumor subtypes that presented most pCR after NC, incidence of different subtypes of breast cancer, and clinical/histological characteristics that may contribute to better response to NC treatment. Define patient profile that would benefit from initial systemic treatment. **Methodology:** Analytical study with review of medical records of 174 patients older than 18 years with breast cancer and submitted to NC. From total, 14 were excluded by diagnosis of metastasis and 22 patients for lacking information in records. Included 139 patients, where pathological response, chemotherapy, molecular subtypes, and immunohistochemistry (IHC) profile were analyzed. **Results:** From 139 patients, twenty-four (17.3%) presented pCR after NC and 115 had partial or no response. Relating IHC to pathological response, no patients luminal A obtained pCR. In HER2 negative luminal B group, seven of 50 patients had pCR (14%). The 21 HER2 + luminal B patients presented 9.52% pCR. In more aggressive subtypes there was significantly higher percentage - four pCR among 11 superexpressed HER2 + patients (36.36%) and 11 pCR of 39 triple negative patients (28.20%). **Conclusions:** pCR varies between different molecular subtypes of breast cancer being prognostic factor in aggressive subtypes. It is well-established the indication of NC for specific cases, so it is possible to probe the research to optimize the early treatment in this group. The creation of standardization care - from patient's reception, encompassing initial clinical evaluation, tumor staging, and molecular classification - can act as a trigger for future service growth, improving early treatment, and obtaining better long-term results.

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HISTOPATHOLOGICAL AND IMMUNOHISTOCHEMICAL CHARACTERISTICS OF 22 CASES OF MALE BREAST CANCER

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Introduction: Male breast cancer is unusual. Due to this low frequency, little information of histopathological characteristics are known. **Objectives:** Describe the histopathological and immunohistochemical characteristics of male breast cancer. **Methodology:** A retrospective study was conducted with the evaluation of 22 cases of male breast cancer. We investigated the age, histological type, histological grade, lymphocytic infiltrate, lymphovascular and neural invasion, estrogen receptor (ER), progesterone (PR), androgen receptor (AR), HER2, Ki67, CK14, BCL2, and p53. The absolute and relative frequencies, mean \pm standard deviation, and median were calculated. **Results:** The mean age was 62.4 ± 11.9 years (range=42–90 years). There were 21 cases of infiltrating mammary carcinoma and 1 of carcinoma in situ. The most common was non-special type infiltrating carcinoma (13 cases). The majority, 15 cases, presented histological grade 2. Lymphocytic infiltrate was considered scarce in 11 cases (50%). Lymphovascular invasion was present in 4 cases and neural invasion in 3 cases. The frequency of hormone receptor positivity was: RE=20 cases (90.9%), PR=17 cases (77.3%), AR=9 cases (40.9%). The other markers presented the following distribution of positivity: HER2=5 cases (22.7%), p53=19 cases (86.4%), BCL2=20 cases (90.9%). CK14 was negative in all cases. The Ki67 index presented a mean of $17.7 \pm 19.7\%$ and a median of 10%. Luminal A corresponded to 11 cases (50%). **Conclusion:** Most tumors were positive hormonal receptor. AR expression was common. The luminal A was the most frequent molecular subtype.

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PROFILE OF LOCOREGIONAL RECURRENCE AND DISTANT METASTASIS OF BREAST CANCER IN BRAZILIAN WOMEN

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Objective: To evaluate the locoregional recurrence and distance metastasis profile in women with breast cancer. **Methods:** Retrospective, cross-sectional study conducted at a tertiary hospital. Data from medical records of women diagnosed between 2003 and 2007 with infiltrating ductal carcinoma of the breast were analyzed; all cases with information available were included. Data collection was performed until October 2018. Variables related to local recurrence or distant metastases from breast cancer, as well as mortality rate, were reviewed. Statistical analyses were performed in the statistical package Stata, version 13.0. **Results:** In the data analysis, 195 patients were included, with a mean follow-up of 109 months. The mean age at diagnosis was 50.3±0.89 years. Immunohistochemistry demonstrated 77.4% luminal tumors, 13.3% HER2 overexpression and 5.1% triple-negative tumors. The overall recurrence rate was 44.6% (87/195), with 9.2% locoregional recurrence, 39.5% at distance, and 5.6% both. Among the cases of distant metastases, 25.6% occurred in bones, 21% in the lungs, 14.4% in the liver, 8.2% in the brain, 1.5% in the peritoneum, and 0.5% in the adrenal. Relapse-free survival was 43 months and for distant metastases 48 months. The overall mortality rate was 54.36% (106/195) and the mean time to death was 69 months. **Conclusion:** There was a considerable rate of recurrence, mainly at a distance, with a predominance of bone, pulmonary, and hepatic metastases. The high mortality rate observed in the present study may be due to limitations in the treatment of the disease, advanced diagnosis, and factors related to tumor biology.

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PROFESSIONAL APPROACH ON WOMEN WITH BREAST CANCER: A LEARNING PROCESS

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Background: The female sexuality is a poor studied subject, even less researched concerning situations in which the woman faces the diagnosis for breast cancer. The disease brings the patient a new perspective of themselves. It is such as making a new identity to awake, somehow due to the finding of the cancer. Psychologically, the woman is not sick by the time she gets to the practitioner; the patient comes down with the process triggered by the diagnosis and clinic picture. Therefore, the family gets involved, specially the partner. **Objective:** Researching how the breast cancer diagnosis may influence the couple relationship dynamics, as well as the female sexuality itself. **Methodology:** This study was held in a reference support center for women with breast cancer. Validated instruments were used to evaluate the sexual dysfunction of women and their partners at the moment they received the diagnosis, and in an average time of three months treatment. All parties involved were volunteers and agreed freely to take part in this study. **Results:** We went through nerve-racking and stress times when part of the women researched stood against us, heading towards the institution Ombudsman, ignoring the confidentiality in terms of the approach. Complaints about intrusive and embarrassing subjects were made; they claimed the language used in the interviews were inappropriate. The problem was solved by clarifying the misunderstandings and by reinforcing their contribution to the study. On the other hand, there were significant contribution on the part of the ones who identified in the approach the opportunity to express their deepest inner feelings. **Conclusion:** The human wholeness should not be forgotten in the sickening process, disregarding the person who falls ill, only focusing on the illness. Thereby, capable multidisciplinary teams are required for this kind of holistic approach.

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AVALIAÇÃO CLÍNICA E CIRÚRGICA DE GINECOMASTIA EM PACIENTES DO SUS

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Introduction: The incidence of gynecomastia in the population is still unknown. However, there are peaks of incidence in the newborn between 60–90% have a transient development, during puberty approximately 10 years of age and with the highest peak between 13 and 14 years of age and in the adult population, with prevalence increased from approximately 50 years old and continues through the eighth decade of life. According to Webster, it occurs in 8 for every 100.00 individuals. Responsible for 65% of benign pathologies in man. **Objective:** To evaluate the epidemiological and clinical characteristics and the most used types of surgery, as well as its aesthetic results and complications. **Methods:** A prospective, observational study was carried out at the Mastology and Breast Reconstruction service of the Barão Lucena Hospital in 40 patients from April 2016 to April 2017. Patients were clinically examined at the outpatient clinic, at the request of hormonal exams in some cases, with mammography and ultrasound imaging, where the following variables were analyzed: origin, education level, age, personal history, gynecomastia degree, type of surgery, complications, and aesthetic result. **Results:** 40 patients were studied over a one-year period. We observed that more than 24 (60%) of our patients came from the metropolitan region of our state, followed by 14 (35%) from the interior and 2 (5%) from other Northeastern states. Gynaecomastia at puberty were found in 18 (45%) patients, followed by 8 (20%) of the patients, followed by the upper level in 10 patients (25%) and retired in 6 (15%) in the age group of 21 to 30 years. There were also 8 (20%) patients identified in the group over 50 years old. It was not evidenced in 27 (67.5%) of the previous patients the risk factors that could lead to the development of gynecomastia. However, drug use accounted for 20%, and use of drugs for hypertension, cancer, antidepressants, and HIV (12.5%). The most used surgery in our service was double-circle in 21 patients (52%), followed by periareolar-Weeter in 14 patients (35%) and transareolopapillary (Pitangy) in 4 patients (10%). We had one case when it was necessary to perform mastectomy with free graft of the areolo-papillary complex. The type of surgery is very much in agreement with the degree of gynecomastia found, where type 3 was evident in 45%, followed by type 1 with 25%, and type 2 with 25%. Type 4 was found in only 5%. Our patients had an average of 24 hours of hospital admission. After analysis of the type of surgery and gynecomastia, the next item to be evaluated were complications, where the vast majority of patients had no complications in 62% of cases, but seroma formation and hematoma were found in 30%. A late complaint of the patients was with regard to the surgical scar, which is a factor to be explained to the patients before the procedure. Another factor of extreme importance and with regard to patient satisfaction in relation to the final result, more than 80% of them considered between good and good, respectively, after return to the outpatient clinic and follow up for a period of 6 months. However, gynecomastia is a pathology with a strong social impact. This could be observed after analyzing the clinical and surgical characteristics of our patients. Surgery proved to be the main option for this type of pathology and demonstrated a very high degree of patient satisfaction.

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THE IMPACT OF A HIGHER EATING FREQUENCY ON THE QUALITY OF DIET AND NUTRITIONAL STATUS OF BREAST CANCER WOMEN UNDERGOING CHEMOTHERAPY

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The aim of this prospective study was to investigate the association between eating frequency, diet quality, and nutritional status of 55 women diagnosed with breast cancer, followed up on the three times of chemotherapy, beginning (T0), during (T1), and after the end of treatment (T2). Dietary data were obtained by applying nine nonconsecutive 24h dietary recalls (24HR) and the Brazilian Healthy Eating Index Revised (BHEI-R) was used for qualitative analysis of diet. The average of the eating frequency was established by summing the number of daily eating episodes in the three 24HR of each time, considering at least 30 kcal (125.52 kJ) per episode. Anthropometric variables, such as, Waist Circumference, Waist-to-Height Ratio, Waist-Hip Ratio, and Body Mass Index were obtained in all the three times. Women who reported higher daily eating frequency [above the median value of each time (T0 and T1: 4.67; T2: 4.33 eating episodes)] presented better anthropometric parameters, in T0 and T1, as well as higher scores for specific components, and BHEI-R global score in T1 and T2. In generalized linear models (GLzM), the daily eating frequency was negatively associated with all the anthropometric variables in T0 and, specifically, with the Waist-to-Height Ratio in T1. There were also positive associations for the following four BHEI-R components in the three times: Total Fruits; Whole Fruits (excluding fruit juices); Vegetables Dark Green, and Orange Vegetables and Legume. Additionally, in T1 and T2 the daily eating frequency was positively associated with the total BHEI-R score, and also with the Whole Grains in T1. The results of this study suggest that women with breast cancer who have higher daily eating frequency present better nutritional status at the beginning of chemotherapy and better quality of diet for different food components during and at the end of the treatment.

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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 2014

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Objectives: Evaluate the characteristics of patients with invasive breast carcinoma submitted to neoadjuvant chemotherapy attended at the Oncoginecology and Mastology service of Dr. Arnaldo Vieira de Carvalho Cancer Institute form 2006 to 2014. **Methods:** A retrospective, descriptive, longitudinal study was performed of patients with invasive breast carcinoma attended at ICAVC in São Paulo; data were analyzed on the database of Microsoft Excel[®]. **Results:** 339 patients were evaluated, of which 57 (17%) underwent adjuvant chemotherapy with predominance of patients with tumors T3 (47.4%), DCI (91.2%) and luminal (72%). The main regimen used was anthracycline in association with taxane (66.7%); 14% patients presented complete clinical-pathological response (pCR); 21% underwent conservative surgery; 3.5% presented local recurrence and 24.6% presented distant metastasis in the mean period of 2 years (disease-free survival). 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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MONITORING OF RISK FACTORS IN FAMILY MEMBERS OF PATIENTS WITH BREAST CANCER

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Optimize the monitoring of risk factors among family members of patients with breast cancer. A systematic review of pertinent scientific articles was performed. For such, the PubMed database was searched for articles published between 2014 and 2016 using the following keywords: breast cancer; risk factors, and family monitoring. Four articles were encountered and two were selected for the present review. The International Agency for Research on Cancer estimates an incidence of 2.5 million diagnoses of breast cancer in the year 2020, which is a 117% increase from the 1.15 million diagnoses in 2002. Family monitoring with the analysis of risk factors among family members is one of the most effective ways to ensure an early diagnosis. The analysis of genetic factors, a family history of cancer and smoking, among other risk factors, can assist in the early diagnosis of the disease and increase the chances of curing the patient. During the initial risk assessment, the determination of the family history is a fundamental tool for outlining the family “pedigree”. Breast cancer is the second more frequent type of cancer in the world and the main cause of death among women in Brazil (37%). The monitoring of risk factors through the analysis of genetic factors, family history, and hormonal disorders is fundamental to the early diagnosis of this disease. Some studies suggest that not all women have the same risk of breast cancer, and that certain factors, called risk factors, increase the likelihood of developing breast cancer. The monitoring of risk factors among family members of patients with a history of breast cancer is a valuable tool for the early diagnosis of the disease. Further studies involving the analysis of genetic aspects are needed to broaden the evaluation of risk factors for breast cancer.

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IMPORTANCE OF HEALTH AGENTS IN THE PREVENTION OF BREAST CANCER

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Objective: The community health agent (CHA) are people from the own community who have been working in primary care since the 1980s. The objective of this study is to evaluate and discuss the impact of health agents in the Basic Health Units and in the community in the prevention of breast cancer. **Methodology:** This is a narrative review about the role of health agents in the prevention of breast cancer. The search for articles happened in the platforms SciELO and PubMed using the descriptors “primary care” and “breast cancer”. The period of publications was from 2009 to 2019. **Results:** The revised articles were focused on primary care, as this is the field of action of CHAs, and most of them cited prevention measures that could be encouraged by these agents in the community. Thus, the dissemination of information, contributing both to primary and secondary prevention, would be the main focus of agents in breast cancer. Although there are interventions in primary care to prevent the disease, these measures have not provided the desired changes in women’s health, which could indicate the depreciation of the work of this agents and the lack of support for these workers. A diet rich in vegetables, lower caloric intake, moderate carbohydrate intake, and physical activity for weight control may reduce the risk of breast cancer, as well as avoid alcohol and tobacco use. These actions can be better monitored through the CHAs’s follow-up, who have a global view of the context in which the population is inserted. **Conclusion:** The creation of a link between the community and the team of CHAs allows a greater passive awareness, and consequently, prevention, in addition to a greater early detection of breast cancer. Therefore, they are critical for the prevention of diseases such as breast cancer.

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THE IMPORTANCE OF SOCIAL SUPPORT AS A DRIVER OF IMPROVEMENT IN THE TREATMENT OF BREAST CANCER

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Objective: It is known that people who receive considerable social support in stress situations have minor negative effects on their health and social well-being. Therefore, this study aimed to evaluate the importance of social support as a driver of improvement in the treatment of breast cancer. **Methodology:** This is a narrative review and aims to describe the development regarding the importance of social support as a driver of improvement in the treatment of breast cancer. The search for articles occurred through access to platforms such as SciELO - Scientific Electronic Library Online and Scholar. The period of publications of the articles chosen was from 2010 to 2017, and the terms delimiters used were: research social support, treatment, and breast cancer. **Results:** Social support in the fight against breast cancer is of fundamental importance for a better treatment. Besides religiosity and science itself, the attachment to social support, be it with friends, family or even people who are going through the same disease is fundamental for an improvement of the patient. According to the work published in the UFPE Nursing magazine by the nurse Keli Regiane Tomeleri da Fonseca Pinto, social support changes the way patients see the disease because it brings more courage and encouragement to face it, as well as more hope about their state of health. Finally, it is of fundamental importance the social support to the patient, since besides improving the physical state of the patient, it also improves his psychological state, and this is of fundamental importance for the cancer healing process. **Conclusion:** Social support has positively impacted the treatment of breast cancer. When inserted into an integral network of care, the woman strengthened her relationships with family and community. It is also mentioned that, in addition to empowering, it deals in a more progressive way with its health-disease process.

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LITERATURE REVIEW: PSYCHIATRY IN PATIENTS WITH BREAST CANCER

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Objectives: the study aimed to connect the psychiatry of breast cancer and psychosocial aspects. **Methodology:** bibliographical research was conducted through LILACS and SciELO databases with the keywords breast cancer and psychiatry. Scientific articles between the period from 2006 to 2015 contemplating the subject review were selected. **Results:** breast cancer is the most common cancer among women in Brazil and in the world. According to INCA, in 2018, it was estimated the detection of 59,700 new cases. Besides the high prevalence and mortality, breast cancer and its treatment leads to psychosocial and social impacts on the lives of women. The psychological and physical changes caused by breast cancer justifies the wide prevalence of depression and anxiety. Mastectomy can be seen as something traumatic and even as a mutilation. Women undergoing mastectomy without breast reconstruction have higher rates of body image dissatisfaction. According to Almeida et al. (2012), satisfaction with the aesthetic result of the reconstruction concerns not just rebuilding the body, but the way each woman perceives and deals with your self-image. It is noted that psychosocial dynamics of breast surgery does not finish with the end of the treatment, as it requires long-term care. The patient's diagnosis and treatment of breast cancer is a multidisciplinary task, however the psychiatrist rarely comes into play at the beginning of the approach. The difficulty in recognizing mental frames is worrying and diagnosis is rarely done. **Conclusion:** It is concluded that the treatment of breast cancer raises psychosocial health effects related to dissatisfaction with their own body image. Thus, it causes anxiety and depression psychiatric frames that are underdiagnosed, since rarely the psychiatrist or psychologist are part of the multidisciplinary team.

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MAMMOGRAPHY AND BREAST CANCER: ANALYSIS OF A PROVEN SCREENING METHOD

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Objectives: To analyze the effectiveness of mammography in breast cancer screening. **Methodology:** The study consists in a literature review, realized between September of 2018 and January of 2019, through a research of scientific articles and editorials in the SciELO and Bireme databases, from Medline and Lilacs. **Results:** There are several established methods playing a central role in the diagnosis and management of breast diseases. Mammography continues being the most representative technique used for breast cancer screening. However, there is still a large discussion about the indications for this screening, leading to no consensus in the scientific society. In 2015, the Swiss Medical Council started not recommending mammography as a screening method, claiming that the benefits did not outweigh the risks for women in general, as 22% of women were subject to false positive results and women with BRCA mutation, vulnerable to radiation, increased their chances of developing the disease. According to Cochrane, there is no evidence that the regular realization of mammograms contributes to reduce the risk of death from breast diseases in women of any age. As the attributions to the cause of death are lacking in the populations surveyed, it is impossible to correlate with the increased risk of general mortality. In addition, it was evidenced that women have been exposed to 30% more improperly mastectomies, being submitted to overdiagnosis, when the article states that one in 424 women was victim of inadequate procedures. **Conclusion:** The current discordant findings will not cause an immediately change in the use of mammography as a preventive method, since there is the need for more embracing international studies that will determine the precise relation between the use of regular mammography and the reduction of the associated mortality risk.

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THE IMPORTANCE OF EXERCISE IN THE PREVENTION OF BREAST CANCER

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Methodology: This is a narrative review study. The search for articles was done on platforms such as SciELO, PubMed, and Scholar. The period of coverage used in the search was from 2011 to 2019, having as descriptors: breast cancer, prevention, and exercise. **Objectives:** To demonstrate the relevance of the recommendation of the practice of physical activities as an indispensable factor in the prevention of breast cancer in a manner proportional to the recommendation of exams. **Results:** Mammography is currently the most preferred form of prevention by physicians and the media. Since the 1980s, when introduced in European countries, the United States, and Canada, clinical trials indicated that mammography screening reduces mortality by 20 to 30% of this pathology. However, recent independent panels show that this rate is only 20% and that it is accompanied by ill effects, such as overdiagnosis. Mammography is undoubtedly an important tool in the prevention of breast cancer and the screening of physicians. However, since cancer arises from the interaction of endogenous and exogenous factors, with lifestyle being the most expressive factor, there should be a greater focus on physical activities, since they reduce the serum levels of some hormones, such as insulin. In turn, these hormones, at high levels, stimulate the growth of tumors. **Conclusion:** This review evidences the practice of physical activities as essential in the prevention of breast cancer. Without replacing mammography as a preventive method, the exercises are effective in reducing the development of tumors and stimulating physiological recovery without the ill effects of mammography. Therefore, about one-third of all cancers can be prevented with healthy eating and physical activity, which shows that for prevention, physical exercise is as effective as mammography, but much less publicized.

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UNILATERAL PAGET'S DISEASE IN YOUNG ADULT: A CASE REPORT

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Introduction: Paget's disease (intraepidermal nipple carcinomatous cell migration from underlying breast carcinoma) is a rare form of breast cancer, occurring between 1 to 4% of patients at the age of 50–60 years. The lesion presents as an eczema-like modification of the nipple's appearance with characteristic melanic pigmentation. **Objectives:** To analyze the importance of an early diagnosis and medical follow-up in a case of Paget's disease with unusual presentation. **Case Report:** C.O.R, female, 35 years on March, 2018, noticed a brownish scaling spot on the left nipple, with no secretion, retraction or pruritus. Ultrasonography was performed, in which a nodule in the left breast was classified as BI-RADS3. After 3 months, a new ultrasonography was performed, obtaining the same result. In November 2018, with noticeable growth of the spot, onset of retraction, pain in stitches and greater desquamation, the main diagnostic hypothesis was eczema. Afterwards, a biopsy of the lesion was requested and Paget's disease was suggested. A mammography was requested and it did not show any changes. Histochemical examination confirmed Paget's disease, with an oncologic surgical indication. On December 2018, the nipple excision was performed, as well as a biopsy of the lump previously reported on ultrasonography, which was subsequently shown as grade 1 invasive cancer, BI-RADS6. On January 2019, a left mastectomy was performed, with removal of 2 axillary lymph nodes. To prevent the disease on the right breast, Tamoxifen was prescribed. **Conclusion:** The report shows the rarity of the case, which involves an unusual age of the disease manifestation. It is important to enable physicians to perform clinical investigation and early diagnosis for the best follow-up and prognosis of the patient, since it is a disease that is often asymptomatic and confused with benign disorders.

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NURSING ASSISTANCE TO PATIENTS WITH BREAST CANCER

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Objective: To report the importance and nursing assistance regarding the prevention and early detection of breast cancer. **Methodology:** The present study was developed through a non-systematized bibliographic research. Articles, books, and data on the subject addressed were searched. **Outcome:** There is no single cause for breast cancer because several factors, such as being a woman and getting older, are the main factors that increase the risk. Other factors such as obesity and overweight, mainly after menopause, frequent exposure to ionizing radiation, first menstruation before 12 years, no children, first pregnancy after 30 years old, have not breastfed, and family history of breast and ovary cancer, especially in first-degree relatives before age 50, only increase the risk of developing breast cancer even more. According to INCA in Brazil, it is estimated that 59,700 new cases of breast cancer were diagnosed each year in the 2018–2019 biennium, with an estimated risk of 56.33 cases per 100,000. Knowing this in our professional work we must guide and ensure preventive actions aimed at prioritizing the early detection of abnormalities in the breast. **Conclusion:** We found that in women the cancer with the highest incidence and prevalence is breast cancer. Therefore extremely important to the effective participation of nurses in relation to support, information, stimulating the patient to start treatment as soon as possible, healing doubts regarding the involvement, and family commitment to it, since low self-esteem and family support is still a great challenge for the multi-professional team. Knowing this the Nurse must consider and evaluate this patient in a holistic way and not only focused on the illness that the patient is affected, in front of this offering humanized assistance.

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NURSING ASSISTANCE IN THE TREATMENT OF BREAST CANCER TO VULNERABILITIES AND CHALLENGES

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Objective: To verify nursing care in the treatment of breast cancer in face of the vulnerabilities and challenges of the treatment. **Methodology:** Bibliographic review in the electronic databases: PubMed, SciELO, Lilacs, Medline through the descriptors: Breast Neoplasia, Nursing Care, and Women's Health. **Results:** Breast cancer is the most feared among women, because of the high occurrence and worrying effects, the breast being an important part of women's aesthetics, besides causing emotional and social problems such as stress, depression, anxiety, and fear. The onset of breast cancer is related to several factors such as family history, long-term contraceptive use, early menarche, life habits such as smoking, obesity, and environmental interference. However, according to the National Policy of Integral Attention to Women's Health, breast cancer is belatedly diagnosed in about 60% of the cases and changing this situation is necessary since the early diagnosis significantly increases the life expectancy of women. Health care professionals such as nursing professionals should take on the responsibility of participating in the detection of breast abnormalities in the consultations, performing comprehensive and humanized care. The role of the nurse during consultations in Women's Health Care is essential, by identifying abnormalities through reception, clinical breast examination, health education, and requesting deeper examinations when necessary. This type of neoplasia provides many vulnerabilities to the affected women, due to several factors, mainly due to the therapeutic forms that have an aggressive and traumatizing character for the life and health of the patient. **Conclusion:** In view of this problem, nursing care has great importance as an educational agent and emotional support in the treatment of breast cancer for the patient and family with the humanized care practice.

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THE COUNSEL OF BREAST CANCER IN THE FAMILY HEALTH STRATEGY

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Objective: To emphasize the role of the Family Health Strategy (FHS) team regarding early diagnosis and support to both the patient and the family in the treatments. **Methodology:** Non-systematized bibliographic research. We searched in articles and books for data on the subject addressed and its applicability in the work of the health team. **Outcome:** At the stage of detection and prevention of disease, professionals at the unit can advise on the importance of conducting self-examination, which is the active position that the Ministry of Health (MS) expects from professionals. The ESF nurse always during the consultations should offer instructions and talk about the importance of performing self-examination of the breasts. The actions of the FHT professionals extend to the post-diagnosis guidelines and their respective treatments. According to a study carried out with 90 nurses in 20 UBS in Diadema (SP) in 2013, 97% of the nurses performed clinical examination of the breasts, 88% indicated the mammography each year, 75% guided the first examination from of the 40 years, and 52% promoted educational meetings. However, the orientation on age, time interval for mammography, and clinical examination, as well as active search for missing women, did not comply with the recommendations of MS. **Conclusion:** The increase in the number of cases of breast cancer reflects on the concern of individuals and planning of actions. Professionals recognize their role in the detection and prevention of breast cancer mainly through guidelines, consultations, and educational activities. It is imperative that the patient is treated in a holistic way and it is worth mentioning that the ESF teams have taken actions to control breast cancer, but there are some compliances between the actions performed and the MS proposals for the screening of this neoplasm that still need review.

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THE RELATIONSHIP BETWEEN THE CONSUMPTION OF ISOFLAVONES AND THE DEVELOPMENT OF BREAST CANCER

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Objectives: The present study investigates the association between the consumption of isoflavones and the development of breast cancer. **Methodology:** This is a literature review conducted through the search of scientific articles in the PubMed, Lilacs, and SciELO databases, from December 2018 to March 2019. **Results:** Dietary intake of isoflavones has been increasing and has been cited as a protective factor against breast cancer. Isoflavones are organic compounds derived from plants, estrogen agonists, and are related to the regulation and control of the major cell multiplication pathways. Studies show that the consumption of isoflavones may be related to breast cancer prevention. Comparing the studies selected (15), some defended the thesis that there is an association between isoflavone consumption and cancer development. Observational studies show that among Asian women, a soy-rich diet is associated with a 30% reduction in the risk of developing cancer; other authors have reported that there is no relationship between dietary intake of isoflavones and cancer development, since there were no associations in women with hormone receptor positive tumors and women receiving hormone therapy. **Conclusion:** Although the current study demonstrate a reduction in breast cancer cases associated with dietary intake of isoflavones, the results will not lead to an immediate change in the prevention of this type of cancer, given the need for more comprehensive studies that determine the precise relationship between isoflavone consumption and development of breast cancer.

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VEGETARIAN DIET AND BREAST CANCER RISK: WHAT IS THE RELATION?

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Objectives: The present study investigates the association between vegetarian diet ingestion and the risk of developing breast cancer. **Methodology:** This is a literature review realized through the search of scientific articles in the PubMed, Lilacs, and SciELO databases, from October 2018 to March 2019. **Results:** Of 6 studies evaluated on the present work, 3 articles (50%) reached the decision that there is an inverse relationship between vegetable and fruit consumption and the incidence of breast cancer, demonstrating that vegetarianism would rather be a protective factor against the development of this type of cancer. Studies have indicated that many natural products such as soybeans, citrus fruits, cereals, and cruciferous vegetables, the basis of a vegetarian diet, can affect the installation and progression of breast cancer. Among the anti-breast cancer effects of this type of dietary pattern are the negative regulation of the expression and activity of estrogen alpha receptors, as well as the inhibition of the proliferation, migration, metastasis, and angiogenesis of cancer cells. Moreover, such foods still help to sensitize tumor cells to radio and chemotherapy. However, not all studies have reached the same conclusion: the other 3 articles searched identified that lifelong exposure to a vegetarian diet appears to have little or no effect on the risk of breast cancer. **Conclusion:** On the face of such dichotomized results, more studies are needed to arrive at the decision that a vegetarian diet decreases or does not change the risk of developing breast cancer. Thus, the vegetarian diet may or may not be indicated for the prevention of breast cancer.

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POST-OPERATIVE OUTCOME IN ELECTIVE SURGERIES

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Objectives: To describe the incidence of adverse events in the post-operative (PO) period of elective plastic surgeries.

Methodology: This is a prospective, observational, and descriptive real-life study conducted in a single hospital center. A total of 499 patients were included in the sample, who submitted to plastic surgeries from June to November 2017, performed exclusively by members of the Brazilian Society of Plastic Surgery – SBCP. The adverse events description concerning to the post-operative period was made through data obtained by the phone survey on the 7th and 30th PO days.

Results: There was a low rate of identified adverse events (1.9%), without statistically significant correlation among local and systemic symptoms reported through the phone survey in the 7th PO and 30th PO days, neither with the size of the surgeries performed ($p>0.05$). There were no deaths and no severe adverse events in the present series. **Conclusion:** This study produced reliable results allowing the description of the low occurrence of adverse events and the importance of active search after hospital discharge.

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PREVENTIVE AND EDUCATIONAL PERFORMANCE OF THE BREAST LEAGUE IN THE MEETING OF ACADEMIC LEAGUES (ELA)

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Objectives: To report the experience of the Liga da Mama (Breast League) of the UFG in the Academic Leagues Meeting (ELA) and the findings found during the service to the population. **Methods:** During the event, the Breast League developed a single questionnaire to compose a final database. We inquired about the personal and family history of breast cancer, as well as risk factors such as hormone therapy, and prevention, such as total breastfeeding time. All women over 40 or who had a personal or family history of breast cancer were referred for physical examination, performed by a medical professional in a suitable room. **Results:** 65 women between the ages of 13 and 86 years were attended at the Information Stand of the Breast League. Of these, 57 had some risk factor (age over 40 years, family history of breast cancer, hormone replacement therapy for more than 5 years, or palpable nodules) and were referred for physical examination of the breasts. 4 women refused physical examination, therefore 53 were examined. At the examination, 6 women had some findings: 2 benign findings of the right accessory breast and 4 suspect findings (1 adolescent 13 years old with bilateral periareolar scaly lesions, 2 females over 40 years with fixed nodules in the lower left quadrant, and 1 female with crystalline papillary discharge on the right). All women with suspected findings were referred to the local health service. **Conclusion:** The action developed by the Breast League met its primary objectives: promoting the health and well-being of the population, through preventive and educational, humanized, and multidisciplinary activities, providing knowledge and experience to every academic body that compose it. In addition, the League was able to use practical methodologies to give, to the collected data, applicability in scientific productions.

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BREAST CANCER AND YOUR RELATION WITH SEXUAL HORMONES

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Sexual hormones, used primarily for pregnancy prevention and hormone replacement therapy (HRT), although they may help treat menstrual disorders and benign disorders of the uterus and ovary, are related to breast cancer. This neoplasm is the second major neoplasm in women, just losing for non-melanoma skin cancer. Besides that, facts that can possibly modulate the risk of breast cancer still being study to confirm their real influence in this pathology, especially the use of contraceptives and hormone replacement therapy. PubMed, Lilacs, SciELO, and Google Scholar databases were searched for studies from 2011 to 2018 that examined the association between sex hormones and breast cancer, as well as epidemiological numbers and other risk factors. The descriptors used to study the studies included: gonadal steroid hormones, breast neoplasms, risk factors, estrogens, and progesterone. A total of 22 studies were included in the review. Although most studies have shown a relationship between sex hormones and the incidence of breast cancer, in this study we conclude that the benefits of these hormones outweigh the risks of developing this type of cancer. In addition, it was concluded that other risk factors such as obesity, sedentarism, nulliparity, late gestation, family history, late menopause, early menarche, absence of lactogenesis, and advanced age influence the incidence of this pathology when compared to sex hormones.

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BRCA2 C.156_157 INSALU MUTATION IN A MALE BRAZILIAN PATIENT WITH BREAST CANCER

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Introduction: BRCA2 is a tumor suppressor gene that encodes a protein involved in the repair of DNA damage. Mutations in BRCA2 are involved in the Hereditary Breast and / or Ovarian Cancer (HBOC) Syndrome. **Objective:** This study aims to describe the case of a male patient with a history of HBOC presenting with the founder mutation BRCA2 c.156_157insAlu. **Case Description:** A 76-year-old male patient had a personal history of prostate cancer, breast cancer, and a previous resection of intestinal polyps. The patient was submitted to NGS (Next Generation Sequencing) genetic test with a panel of 35 genes associated with HBOC, presenting with negative results for pathogenic variants, probably pathogenic, and variants of uncertain significance (VUS). The family history described a daughter with breast cancer with a genetic test revealing a pathogenic variant BRCA2 c.156_157insAlu, compatible with a founding mutation of the Portuguese population. The family history of the patient was limited because he did not know his biological father or relatives of paternal origin. **Discussion:** The BRCA2 c.156_157insAlu variant was initially described by Teugels et al., 2005, as an Alu insertion in exon 3 of the BRCA2 gene, resulting in the loss of this exon during mRNA splicing. Exon 3 is important in the tumor suppressor function of the BRCA2 protein since it is related to its transcriptional activation domain. A regional founding effect was described for this variant in Portuguese families with HBOC. Pathogenic variants such as this impact on the patient's risk against the associated tumors. Commonly used genetic tests (NGS) do not detect large insertions and deletions. Due to the massive Portuguese immigration to Brazil, more attention should be paid to the characterization of individuals during genetic counseling, emphasizing the need to complement genetic tests in cases of Portuguese ancestry, or even in the inclusion of MLPA (Multiplex Ligation-dependent Probe Amplification), in the characterization of this Portuguese founding variant.

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OCULAR AND ORBITAL METASTASIS IN BREAST CANCER: CASE SERIES REPORT

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Objectives: Breast cancer is the most prevalent cancer subtype among women and it is also the leading cause of cancer death in women. It can spread disease to all kind of structures, including to the orbit and eye, also being responsible for 2–7% of metastasis. Most patients presenting with ocular metastases already have a history of treated primary cancer. The majority of ocular and orbital metastasis is a primary result of breast (47%), lung (21%), and gastrointestinal tract (4%) lesions. The aim of this report is to analyze the efficacy of radiotherapy treatment in ocular and orbital metastasis from breast cancer in women. **Methods:** It is a descriptive study of four case reports of ocular and orbital metastasis in breast cancer patients, during a year from 2017 to 2018, who were treated in a public hospital and a private clinic. **Case report:** Among the four case reports, only one patient had a newly diagnosed cancer by its visual symptoms as the first presentation of breast cancer; in the others, disease-free survival in breast cancer patients was five to eight years, and, in one of them, the ocular metastasis occurred simultaneously with multiple metastasis in nervous system. After beginning treatment, all the symptoms initially reported, such as diplopia, blurry vision, decrease in visual acuity, eye pain, inflammation and redness of the eye, conjunctival injection, loss of eye motility, and palpebral ptosis were softened. Excluding one of them, all the four patients received radiation therapy in the orbit. Regarding the case with the newly diagnosed patient, it was treated with hormone therapy (Fulvestrant) and did not undergo radiotherapy. For other patient, it was given intensity-modulated radiation therapy (IMRT) with complete treatment response after 3 months treatment. For the third patient, brain tridimensional radiation therapy (RT3D) was preferred due to the presence of other metastasis in the nervous system. This patient had her visual symptoms minimized, but still presented other neurological disorders because of multiples brain metastasis. The fourth patient is still waiting for the beginning of radiation therapy. **Conclusion:** Despite rare, ocular and orbital metastasis is strongly correlated to patients with breast cancer history and radiation therapy can be an important therapeutic arsenal to local control.

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UNUSUAL METASTASIS OF BREAST CANCER: REPORT OF THREE CASES

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Introduction: The most frequent sites of breast cancer metastasis are bones, liver, lungs, and brain. Other places are infrequent. **Objective:** To report three cases of unusual metastasis of breast cancer. **Methods:** the unusual sites of metastasis of breast cancer were retrospectively searched in the laboratory files. **Methodology:** Three women with unusual metastases of breast cancer were identified. First case: 75 years old, metastasis to the stomach. The immunohistochemical (IHC) study of the lesion in the stomach showed positivity for GATA-3, cytokeratin 7, and receptor of estrogen (RE), and negativity for GCDF-15, mammaglobin, progesterone (PR), HER2/neu, and E-cadherin. The Ki67 index was 5%. Histopathological and immunohistochemical findings revealed gastric metastasis from invasive lobular carcinoma of the breast. Second case: 51 years old, metastasis to the stomach. The IHC study of the lesion in the stomach showed positivity for the cocktail of keratin (AE1/AE3), HER2/ neu (focal), GATA-3, RE, and RP, and negativity for CD-3, CD-20, and E-cadherin. The Ki67 index was 5%. Histopathological findings, associated with the IHC study, demonstrated gastric metastasis from invasive lobular carcinoma of the breast with weak and focal immunoidentification of the c-erbB-2 oncoprotein. Third case: 39 years old, metastasis to the cervix and left ovary. The IHC study of the cervix showed: p-63: negative, cytokeratin 8/18: positive, p16: negative, GATA-3: positive, RE: positive (1%) and Ki67: 10.0%. In the left ovary, we found: negativity for p-63, p16, inhibin alpha, and WT1-protein Wilms-1 tumor; and positivity for cytokeratin 8/18, GATA-3, and ER (30%). Ki67 was 15%. **Conclusions:** The hypothesis of breast cancer metastasis should be remembered by clinicians and pathologists in women with a history of breast cancer who are with tumor lesions in unusual places.

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BENIGN BREAST LUMPS: SYSTEMATIC REVIEW OF DIAGNOSIS AND CONDUCT

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Objectives: The objective of this work is to determine a better way to diagnose and to conduct benign mammary nodules. **Methodology:** This study is a systematic review. Data were obtained through search in virtual databases, such as Lilacs and Medline, and were submitted through inclusion and exclusion criteria. Then, 20 final articles were selected. **Results:** The articles analysis showed that the best way of diagnose benign mammary nodules is to use a triple test, which is an association of physical exam, images exams, fine needle aspiration cytology, or even core biopsy. Firstly, a complete anamnesis and physical exam should be performed. The second step is to characterize it with the help of mammography in various incidences or USG of the breasts, for dense breasts and mainly to distinguish between solid or cystic nodule. Besides that, the USG can be used to distinguish better characteristics of a benign or malignant nodule. In cystic lesions, the next step is the aspiration cytology, which can be used as diagnostic and therapeutic, to see characteristic of the fluid. Finally, in the indeterminate, suspect, or malignant results by aspiration cytology, the open biopsy with enucleation of the lesion is indicated to close the diagnosis. **Conclusion:** It is possible to conclude with this work that the best form to diagnose benign mammary nodules is to use a triple test, since it can demonstrate morphological, cytological, and histopathological characteristics of mammary nodules. Then, benign and malignant lesions can be distinguished, which is important because, when we early diagnose, we avoid late treatment and unnecessary invasive procedures in benign lesions. After the correct diagnose, the choice of the conduct is based on the age of the patient, the result of the triple test, and the size of the lesion.

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PATIENT PROFILE WITH EARLY STAGE BREAST CANCER SUBMITTED TO INTRAOPERATIVE RADIOTHERAPY IN TERTIARY SERVICE IN GOIÂNIA

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Objective: Several studies shown that the overall survival and local control is the same applying segmental resection plus radiotherapy than mastectomy, but the time spent in the radiotherapy is considerably long. So, the intraoperative radiotherapy (IORT) came to reduce the days of treatment, with the same benefit. Intrabeam[®] is a type of IORT, indicated for selected women diagnosed with breast cancer, but treating partial breast instead of whole breast, with the same outcomes of conventional radiotherapy. Evaluate the profile of patients with early stage breast cancer diagnosis submitted to IORT. **Methodology:** Ten postmenopausal women with breast tumors and clinically negative axillary lymph nodes were evaluated between 09/2018–01/2019. All patients were submitted to quadrantectomy, sentinel lymph node biopsy, and IORT with Intrabeam[®]. It was evaluated the age, menopausal status, unifocal tumors, tumor size, histological subtype, hormonal receptors, profile of invasions, and association with CDIS. **Results:** The mean age of the patients was 64 years. The majority of the lesions presented T1 pathological staging, only one T2 (2.2 cm); all surgical margins were free. CDI was the most prevalent, comprising 70% of all cases, against only 3 cases of CDIS, and 1 had the entire tumor excised with mamotomy. All patients evaluated had positive hormonal receptor tumors. As for oncoprotein c-erbB-2, 2 patients were positive. Only 1 patient presented lymph node commitment with macrometastases. When evaluating histological grade, 4 lesions presented intermediate grade, 3 presented low grade, and 2 lesions presented high grade. There was no vascular invasion in any of the analyzed lesions. The dose was 20 Gy prescribed on the surface of applicator, that varied from 4–5 cm. Only one patient presented local infection and none evolved with radiodermatitis. The greatest benefit for these patients was that 50% of them lived in other cities and even in other states, far from radiotherapy services. **Conclusion:** For selected patients with early breast cancer, a single dose of radiotherapy delivered at the time of surgery by use of targeted IORT should be considered as an alternative to external beam radiotherapy delivered over several weeks. The criteria for selecting low-risk patients to be submitted to IORT in this study was considered equivalent to those established by the consensus of the ESTRO (European Society for Radiotherapy and Oncology) and ASTRO (American Society for Radiation Oncology).

