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EDITORIAL
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Collaborating with the evolution of global research

Rosemar Macedo Sousa Rahal[1]

Research in Brazil, despite the numerous difficulties encountered, has increased robustly in recent years. The determination of researchers and their respective groups has overcome barriers, thus allowing the development of science in our country[1]. As irrefutable evidence of this growth, we can observe the high level of work presented at the largest Latin American Breast Cancer Research meeting, the Brazilian Breast Cancer Symposium (BBCS)[2,3].

BBCS has already been the stage for research carried out throughout the country and by several international groups, from 23 countries. The robustness and quality of the data presented at the symposium is a great stimulus for the continuation of this work, and the certainty that the efforts to hold the event are justifiable. The themes presented by participants range from basic research, through epidemiology, imaging, local and systemic treatment, and even translational research[2,3].

The BBCS agenda has become even more plural in 2023, being divided into courses, consensus and research group meetings, conferences, and preceptorships. However, the greatest emphasis remains on the presentation of scientific works in oral or poster form (commented and electronic). The works are evaluated and awarded by a team of renowned professors and by following strict and objective criteria, avoiding possible biases in their judgments[4].

Gratitude to everyone who was present in the bucolic and picturesque Pirenópolis, at the 12th Edition of BBCS. And may the warmth and natural beauty of the Brazilian cerrado count on your presence at BBCS 2024.

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MAIN AUDITORIUM

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Machine learning can reliably predict malignancy of BI-RADS 4a and 4b breast lesions based on clinical and ultrasonographic features

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Objective: The objectives of this study were to establish the most reliable machine learning model to predict malignancy in BI-RADS 4a and 4b breast lesions and optimize the negative predictive value to minimize unnecessary biopsies. **Methodology:** We included clinical and ultrasonographic attributes from 1,250 breast lesions from four institutions classified as BI-RADS 3, 4a, 4b, 4c, 5, and 6. We selected the most informative attributes to train the models in order to make inferences about the diagnosis of BI-RADS 4a and 4b lesions (validation dataset). Using the best parameters and hyperparameters selected, we tested the performance of nine models and 1,530 ensemble models. **Results:** The most informative attributes were shape, margin, orientation, and size of the lesions, the resistance index of the internal vessel, the age of the patient, and the presence of a palpable lump. The highest mean NPV was achieved with XGBoost (93.6%). The final performance of the best ensemble model was NPV=96.4%, sensitivity=81.5%, specificity=84.1%, PPV=46.8%, f1-score=59.5%, and the final accuracy=83.7%. Age was the most important attribute to predict malignancy. The use of the final model associated with the patient's age would reduce by 51% the number of biopsies in women with BI-RADS 4a or 4b lesions. **Conclusion:** Machine learning can predict malignancy in BI-RADS 4a and 4b breast lesions identified by ultrasonography, based on clinical and ultrasonographic features. Our final prediction model would be able to avoid 51% of the 4a and 4b breast biopsies, without missing any cancers.

Keywords: ultrasonography; machine learning; artificial intelligence; image-guided biopsy.

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Management of locoregional lymph node metastasis from occult breast cancer

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Objective: Occult breast cancer (OBC) is an occasional condition. Regarding the small number of cases in studies, the gain of treatment with mastectomy remains controversial. This study aimed to determine the treatment and prognosis of OBC patients with locoregional lymph node metastasis (LNM). **Methodology:** We analyzed patients registered in the Oncologic Clinic of Azerbaijan Medical University between 2007 and 2021, with locoregional LNM as well as bilateral negative mammography, ultrasonography, and MRI of the breasts. Overall survival (OS) was compared by treatment groups (ALND+R – axillary lymph node dissection and radiotherapy; ALND+MAST±RT – axillary lymph node dissection, mastectomy with or without radiotherapy). **Results:** Among 36 patients, 28 were treated by ALND+RT and 8 were treated by ALND+MAST±RT. The median follow-up for these patients in the treatment groups was 12.5 and 10.3 years, respectively. There was no notable difference in OS between the treatment groups. **Conclusion:** The prognosis was analogous in OBC patients with various treatment ways. This supports the possibility of avoiding mastectomy in these patients.

Keyword: breast neoplasm.

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Pink APP: Strategy for resolving breast cancer screening actions according to the ITABERAÍ project

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Objective: The ITABERAÍ Project is a phase III multicenter randomized clinical trial that deals with intervention through training of community health agents (ACS) based on evidence of tracking in physical examination of the breast. This study aimed to develop an application for a mobile device as a strategy for resolving ACS actions in breast cancer screening, based on the ITABERAÍ Project. **Methodology:** The application was developed to be installed on the tablet used by the ACS, who works in the Primary Health Care Network in the city of Itaberaí. The graphical interface of the application was developed in Dart/Flutter, and for the back-end part, Python programming language was used, together with its Flask framework for the creation of the application programming interface (API), which is responsible for making the communication between the database data and the application. For the relational database, the MySQL software was used. The variables used to build the application were sociodemographic data, life habits, anamnesis, previous examinations, and information about the physical breast examination of women aged 40 years or older, residing in the municipality of Itaberaí. For analysis, the database will be exported to the REDCap Platform (Research Electronic Data Capture). **Results:** The application was validated with 235 entries, it is currently in version 1.5 and in use by 75 ACS. In the 4 months of use, 1,963 women were registered, of which 1,261 (64%) were in the control group and 702 (36%) were in the intervention group. **Conclusion:** The Pink APP proved to be easy to use and effective for collecting, storing, and exporting data for analysis, which can help improve and manage public policies.

Keywords: mobile applications; screening; breast cancer; community health workers.

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Vaccum-assisted biopsy for breast carcinoma diagnosis: Cost-minimization analysis

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Objective: The objective of this study was to carry out the cost-minimization analysis between the vacuum-assisted biopsy (VAB) and the e-lumpectomy. **Methodology:** The analysis was based on a retrospective evaluation of 1,833 VAB at Pérola Byington Hospital (PBH), including the pathological results and proportion of patients requiring a lumpectomy after the procedure. It was analyzed from three perspectives: PBH (direct medical costs), the Unified Health System – SUS (Sigtap), and the Brazilian Society (Sigtap and indirect costs). The VAB cost kit (needle, guide clip, marker, and reservoir) was estimated at R$ 2,173. The cost of lost productivity was based on gross domestic product per capita (R$ 120 per business day). **Results:** From an HPB perspective, the average total cost for a patient who undergoes a VAB is R$ 3,667 and for a lumpectomy is R$ 4,313 (average savings of R$ 646). Under the SUS perspective, the average cost for VAB is R$ 2,987 and for a lumpectomy is R$ 2,700 (an increase of R$ 287). The analysis from the perspective of society resulted in a savings of R$ 128 per patient (fewer days away from patients undergoing VAB). **Conclusion:** Cost minimization found that VAB is cost-saving compared with lumpectomy (from the perspective of the PBH), which exclusively sees SUS patients, as well as the perspective of society. When analyzed from the perspective of SUS, there is a small increase in cost, but the cost of the VAB kit used may have overestimated the costs and an incorporation could decrease the material costs.

Keywords: breast cancer; diagnosis.

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Digital breast tomosynthesis added to synthetic mammography (DBT + s2D) in women with partially fatty or heterogeneously dense breasts (patterns 2 and 3 ACR BI-RADS): Systematic review, meta-analysis, and clinical outcomes in brazilian breast cancer screening

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Objective: The objectives of this study were to compare DBT + s2D to digital mammography (DM) in breast cancer screening of women with breast patterns 2 and 3 ACR BI-RADS and evaluate the clinical outcomes in Brazil. **Methodology:** This is a systematic review and meta-analysis (PRISMA) comparing DBT+s2D with DM in women between 40 and 69 years old with breast patterns B and C of ACR BI-RADS 5th Edition eligible for biennial breast cancer screening. The Medline, PubMed, Embase, and Cochrane databases were searched on September 06, 2022 for the descriptors: digital breast tomosynthesis, DM, and breast cancer combined to Boolean AND or OR. To estimate outcomes between the screening strategies, a hybrid decision analytic tree with a Markov transitional model was built. **Results:** A total of 18 publications from 11 studies were included, two randomized clinical trials and the others, prospective or retrospective observational studies. The detection cancer rate of DBT+s2D was 1.35 (RR, p<0.001), the detection invasive cancer rate was 1.48 (RR, p<0.001), the recall rate (RR) was 0.81 (RR, p=0.028), the biopsy rate was (BR) 0.89 (RR, p=0.303), and the positive predictive value for recall (PPV1) was 1.64 (RR; p<0.001) when compared with DM. For every 10,000 screening exams, 49 biopsies and 69 recalls would be avoided with DBT+s2D. DBT+s2D would have a lower rate of interval cancer (0.13% for DBT+s2D and 0.19% for DM), while it would detect more patients in the early stage of breast cancer (TNM 1) 0.74% for DBT+s2D and 0.45% for DM). DBT+s2D would present superior results regarding the number of false positives and true negatives. For every 10,000 screens, 79 false positives would be avoided, and 80 more true negatives would be identified when compared with DM. **Conclusion:** DBT + s2D breast cancer screening for women with breast patterns B and C BI-RADS would improve Brazilian screening outcomes when compared with mammography.

Keywords: digital breast tomosynthesis; digital mammography; breast cancer.

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Preliminary results of breast cancer screening based on physical breast examination by community health agent (ACS) – Projeto ITABERAÍ

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Objective: The ITABERAÍ Project is a study that deals with intervention through the training of community health agents (ACS) based on evidence of tracking in physical examination of the breast. The objective of this study was to present preliminary results of breast cancer screening carried out by community health agents (ACS) in women aged 40 years or older, according to the ITABERAÍ Project. **Methodology:** This is a phase III multicenter randomized clinical trial, whose observation unit was data from women aged 40 years or older, without a diagnosis of breast cancer, who consented to participate in the study and were registered by the ACS in the Pink Application. For randomization, the Family Health Team (ESF) of each ACS was considered, and these were randomly allocated into control group (CG) and intervention group (IG). The physical examination of the breast performed by the ACS was considered an intervention. **Results:** Until now, 1,261 women have participated in the study, of whom 1,259 (64.2%) were from the CG and 702 (35.8%) were from the IG. The mean age was 56.8 years, in the CG, it was 56.7±11.22 years, and in the GI, it was 57.1±11.18 years (p=0.47). Of the total number of women, 85.5% reported not having health insurance, 78.5% seek medical assistance annually, 73% do not perform physical activity, 88.4% declared not to be a smoker, 92.7% did not use alcohol, 65% had a high IMC, and 75.7% reported having had a mammogram at some point in their lives. There was no significant difference in these variables between groups. A total of 174 (24.8%) altered cases were identified in the physical examinations performed by the ACS, and of these, 2 (1.1%) cases with diagnostic confirmation of breast cancer after biopsy. **Conclusion:** Preliminary results show that trained community health agents can support breast cancer screening and generate information that can support decision-making and optimize public spending on health.

Keywords: screening; breast cancer; community health workers.

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Sentinel lymph node biopsy versus no axillary surgery in early breast cancer clinically and ultrasonographically node-negative: A prospective randomized controlled trial – venus trial early results after 3.5 years of study inception

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Objective: The VENUS trial is an ongoing prospective, multi-center, non-inferiority randomized controlled clinical trial aimed at comparing the disease-free and overall survival of T1-2 N0 M0 breast cancer patients subjected to either (a) sentinel lymph node (group sentinel) or (b) no axillary surgery (group no-sentinel). This is a partial report on the initial data collected 3.5 years after the trial started. VENUS differs from previous similar trials in that women undergoing mastectomy and neoadjuvant chemotherapy are accepted. **Methodology:** The protocol was approved by the local research ethics committee (CAAE: 068051 18.2.0000.5404). Initial axillary status was ascertained through physical examination and axillary ultrasound. Randomization is being stratified by age and clinical tumor size. Secondary endpoints include regional recurrence-free survival, axillary recurrence rate, axillary morbidity rate, ultrasound accuracy, and cost-effectiveness. The sample size was estimated at 800 participants. Primary and secondary endpoints will be reported after 5 years of follow-up of the completed cohorts. VENUS trial is registered in Clinical Trials (Identifier: NCT05315154) and ReBEC (Identifier: RBR-8g6jbf). **Results:** As of February 2023, 176 patients were enrolled and 156 were randomized to the sentinel (84 patients) and no-sentinel (72 patients) groups. The current mean follow-up time is 18.57 (+8.52) months. Patients are statistically evenly distributed across study groups regarding age and molecular subtype. Sentinel lymph node positivity in the sentinel group was 17.8% (1.19% isolated tumor cells, 3.57% micrometastasis, 11.90% 1–3 macrometastasis, and 1.19% > 4 macrometastasis). There were no axillary recurrences in both groups. **Conclusion:** Until now, with nearly 20% of the trial completed, VENUS showed no significant difference regarding its posted objectives in women undergoing or not sentinel lymph node dissection.

Keywords: breast neoplasms; breast cancer; sentinel lymph node biopsy; ultrasonography.

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Oncological outcomes of selective axillary dissection using carbon as a marker

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Objective: The use of axillary marking before neoadjuvant systemic therapy (NST) is a field of controversy in patients with positive lymph nodes (LNs). Several methods were tested leading to a reduction in the false negative rate compared with the sentinel lymph node (SLN), adding precision. The aim of this study is to evaluate oncological outcomes in patients undergoing selective axillary dissection with pre-NST marking with 4% carbon. **Methodology:** A prospective study was carried out in patients with cT1–T4 and cN1–N2 breast cancer who underwent analysis of suspected LNs and concomitant marking with 4% carbon. After NST, the marked LNs were identified and resected associated with SLN biopsy. The oncological outcomes identified were overall survival (OS), specific survival (SE), distant disease-free survival (DDFS), axillary recurrence (AR), and local recurrence. **Results:** A total of 168 patients were analyzed over a median time of 49 months. Axillary dissection was omitted in 89 (50.6%) cases. Out of 168 cases, 5 (2.9%) had AR. There was a significant association between axillary dissection and AR (0 vs. 6% p=0.012). The DDFS was 140/168 (83.3%), SG 158/168 (94%), and SE 158/163 (96.9%). **Conclusion:** The use of carbon as a marker in selective axillary dissection is a reliable, low-cost, and easy-to-perform material. Among the oncological events, AR should not be used for post-downstaging axillary evaluation analysis, as it is a rare event and is not necessarily related to OS or DDFS.

Keywords: breast cancer; neoadjuvant treatment; sentinel lymph node biopsy.

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What happens in residual disease after neoadjuvant chemotherapy? Efficacy of a novel *in vitro* breast cancer chemoresistance platform to demonstrate high resistance to drugs

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Objective: Our preliminary study aimed to validate the efficacy of a novel *in vitro* chemoresistance platform to demonstrate tumor resistance in residual disease after neoadjuvant treatment for breast cancer. **Methodology:** Patients with invasive BC who presented residual disease after neoadjuvant chemotherapy (NACT) were included. Fresh tumor samples were collected during surgery and dissociated to obtain the tumor cells. The tumor cells were cultured in the chemoresistance platform with doxorubicin, epirubicin, paclitaxel, docetaxel, and cyclophosphamide, and after 72 h, cell viability was evaluated. The test result is defined based on cell viability as low (<40%), medium (40–60%), and high (>60%) resistance. **Results:** Samples from 20 patients with residual disease after NACT were tested in the chemoresistance platform. Regarding molecular subtypes: 9 tumors were triple-negative (45%), 6 luminal (30%), 4 LuminalHER2 (20%), and 1 HER2 (5%). A total of 16 (80%) patients responded partially to NACT, and 4 (20%) presented disease progression. Most (80%) of the patients used ACT (doxorubicin + cyclophosphamide + paclitaxel) chemotherapy regimen, 10% only paclitaxel, and 10% doxorubicin plus cyclophosphamide. The chemoresistance platform demonstrated that tumors treated with doxorubicin, paclitaxel, and cyclophosphamide in neoadjuvant setting presented high rates of resistance to the drugs (94.7% showed high resistance to paclitaxel, 58% to doxorubicin, and 52.6% to cyclophosphamide). In addition, we investigate if the tumor becomes more resistant to drugs from the same class (taxanes and adriamycin) of the treatment already used by the patients and evidenced 93.7% of high resistance to docetaxel and 50% to epirubicin. **Conclusion:** This preliminary finding highlighted the efficacy of the *in vitro* chemoresistance platform to demonstrate the acquisition of resistance during NACT and suggested a role of acquired resistance in the worse prognosis of patients with residual disease after NACT.

Keywords: breast neoplasms; neoadjuvant chemotherapy; drug therapy; residual neoplasms; drug resistance.

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High risk of metabolic dysfunction in non-obese breast cancer survivors

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Objective: The objective of this was to evaluate the metabolic profile of non-obese women with breast cancer compared with non-obese women without cancer. **Methodology:** A cross-sectional comparative clinical study was carried out with the inclusion of 260 women (according to sample calculation). The main group consisted of 130 women with a body mass index (BMI)<30 kg/m^2, with a histological diagnosis of breast cancer, stages I–III, aged between 45 and 75 years, in amenorrhea for ^{3}12 months, and without cardiovascular disease established. The control group consisted of 130 women with the same inclusion criteria, without breast cancer. The groups were matched by age, BMI, and time since menopause and compared in a 1:1 ratio. Clinical, anthropometric, and biochemical data were collected. Women who had three or more diagnostic criteria were considered to have metabolic syndrome (MS): WC > 88 cm; triglycerides (TG) > 150 mg/dL; HDL cholesterol < 50 mg/dL; blood pressure > 130/85 mmHg; and glucose >100 mg/dL. For statistical analysis, the Student's *t*-test, the gamma distribution (asymmetric variables), the chi-square test, and logistic regression (odds ratio – OR) were used. **Results:** In assessing the factors that affect the metabolic profile, a higher occurrence of MS and blood pressure impairment was observed among women treated for breast cancer when compared with controls (30.8% vs. 20.0%, and 25.4% vs. 14.6%, respectively) (p<0.05). A higher proportion of women treated for breast cancer also had higher than desirable levels of total cholesterol and blood glucose in the comparative analysis (56.2% vs. 43.1% and 29.2% vs. 15.4%, respectively) (p<0.05). In the risk analysis of metabolic dysfunction, adjusted for age and time since menopause, women with breast cancer had a significantly higher risk for MS (OR=2.76, 95%CI 1.48–5.15), increased blood glucose OR=2.69, 95%CI 1.46–4.96), and blood pressure (OR=3.03, 95%CI 1.51–6.10). In the analysis of the subgroup with BMI <25 kg/m^2, the main group had a higher occurrence of metabolic syndrome when compared with the group without breast cancer (n=53) (17.2% vs. 1.9%, respectively, p=0.007). Women with a BMI<25 kg/m^2 had significantly higher values for WC (82.6±8.5 vs. 79.9±6.4 cm, p=0.048), SBP and DBP (129.2±17.1 and 77. 7±8.8 mmHg vs 118.2±15.1 and 73.6±8.8 mmHg, p=0.0002 and p=0.01, respectively), and blood glucose (99.7±32.5 vs. 86.6±7.6 mg/dL, p=0.0002) when compared with women with the same BMI. **Conclusion:** Non-obese women treated for breast cancer were at high risk for metabolic dysfunction, expressed by the higher prevalence of MS, hypertension, and diabetes when compared with women without breast cancer. The risk remains in the subgroup with ideal BMI.

Keywords: breast cancer; metabolic syndrome; diabetes; hypertension; obesity.

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MammaPrint™ 70-gene signature with ultralow-risk profile – characteristics and results in the AGEMA-BRA cohort

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Objective: The objective of this study was to analyze the clinical characteristics and outcomes of the ultralow-risk population of the AGEMA-BRA study and compare them with data from the MINDACT study. **Methodology:** This is a retrospective study of patients submitted to genomic risk assessment by the 70-gene MammaPrint™ signature, in the Brazilian population, in a database provided by GenCell, from 2016 to 2020 (AGEMA-BRA study). Patients with an MP score>0.355 were considered an ultralow risk (ULR). To verify the association between qualitative variables, the chi-square test was used. This study was approved by the research ethics committee of the State University of Ponta Grossa (CAAE: 12194219.4.0000.0105). **Results:** The population under analysis corresponds to 951 patients, of which 542 (57.1%) were at genomic low risk, with 144 (15.2%) at ULR. Clinical characteristics and outcomes were available for 251 patients with follow-up (FU) of 42 months, and all low-risk patients (nULR and ULR) were alive, with one living with the disease in each group (nULR and ULR). Univariate analysis of epidemiological, anatomopathological, and immunohistochemical characteristics was performed. In this analysis, only the tumor grade reached statistical significance (p=0.004) demonstrating in the nULR patients 13.7% G1, 67.7% G2, and 18.5% G3 and in the ULR cases 34% G1, 59.6% G2, and 6.4% G3. The other parameters analyzed did not reach statistical significance. **Conclusion:** Comparative analysis between the epidemiological, anatomopathological, and immunohistochemical characteristics of patients with nULR and ULR proved to be very similar with statistically significant differences only in tumor grade. In the MINDACT study, size, tumor grade, and progesterone receptor positivity reached significance. The evaluation of the outcomes, with a mean FU of 42 months, did not show relevance between nULR and ULR, probably due to the low aggressiveness of the disease (which is linked to the late risk of relapse) and to the sample size. Analysis with larger FU and in a larger universe of patients is necessary to confirm these results.

Keywords: breast cancer; hormonal antineoplastics.

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Quality of life in Brazilian women with early breast cancer on adjuvant endocrine therapy

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Objective: This study aimed to evaluate the quality of life (QOL) in women with early breast cancer treated with adjuvant endocrine therapy and to explore its relationships with patients' clinical and social characteristics, type and time on endocrine therapy, and site of treatment (public vs. private health service). **Methodology:** Women with a past history of early-stage estrogen-receptor-positive invasive carcinoma of the breast on adjuvant endocrine therapy for at least 6 months were invited to participate in this study. To assess QOL while on therapy, patients were assessed with EORTC QLQ-C30 and QLQ-BR23 questionnaires. Demographic and clinical information was reviewed from medical records. Data collection was performed using the RedCap software, and statistical analyses were performed using the R software (R Core Team (2022). **Results:** From June 2021 to March 2023, a total of 212 patients from 6 institutions (2 public and 4 private) were evaluated. The median age was 56.7 years. A total of 51 (24.1%) patients were premenopausal, 138 (65.1%) received (neo)adjuvant chemotherapy, and the mean time on endocrine therapy was 3.7 years. A total of 115 (54.2%) patients were on aromatase inhibitors, 31 (14.6%) were on ovarian suppression, and 66 (31.1%) were on tamoxifen. Domains of emotional functioning 64.9 (standard deviation – SD 28.4), cognitive function 65.4 (31.9), future perspective 56.8 (35.3), sexual functioning 19.9 (21.9), and sexual enjoyment 47.2 (28.0) were affected in this cohort. Premenopausal women presented with significantly lower scores for emotional functioning (54.6 vs. 68.2, p=0.003) and cognitive functioning (56.5 vs. 68.2, p=0.022) than postmenopausal women. Among premenopausal patients, ovarian suppression contributed to lower scores in cognitive and social functioning domains. **Conclusion:** This study showed significant impairment of QOL of women on adjuvant endocrine therapy, especially in premenopausal women.

Keywords: breast cancer; quality of life.

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Adherence to endocrine adjuvant therapy in women with early hormone-positive breast cancer

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Objective: This study aimed to evaluate adherence to adjuvant endocrine therapy in women with early breast cancer and explore its relationships with patients' clinical and social characteristics and site of treatment. **Methodology:** Women with a past history of early-stage estrogen-receptor-positive invasive carcinoma of the breast on adjuvant endocrine therapy for at least 6 months were invited to participate in this study. Adherence was assessed with the questionnaire MMAS-8. Demographic and clinical information was reviewed from medical records. Data collection was performed using the RedCap software, and statistical analyses were performed using the R software (R Core Team, 2022). **Results:** From June 2021 to March 2023, a total of 212 patients were recruited in 6 institutions. The median age was 56 years. Notably, 29.2% were black, 24.1% were premenopause, 38.2% had stage I disease, 65.1% received chemotherapy, and 16.5% received HER2 blockade. The mean duration of endocrine therapy use was 3.7 years. A total of 115 (54.2%) patients used aromatase inhibitors. Notably, 24 (11.4%) patients had low adherence, 76 (36.5%) had intermediate, and 111 (52.6%) had high adherence to adjuvant endocrine therapy. There is a tendency that more postmenopausal women were classified in high adherence grupo than premenopausal women (55.9% vs. 42% p=0.19). There is a tendency that more women in public service had higher adherence than women in private service (59.3% vs. 50.3% p=0.07). There was no difference in adherence in relation to ethnicity and type/duration of endocrine treatment. **Conclusion:** This study for the first time shows that high adherence to endocrine therapy only happens in 52.6% of patients, lower than reported in previous studies. This result draws attention because it can compromise survival. We will continue the recruitment of patients in the private service and in the public service to assess the rate of adherence in a larger population and the relationship with demographic characteristics.

Keywords: breast cancer; medication adherence.

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Incidence of interstitial lung disease and cardiotoxicity with trastuzumab deruxtecan in breast cancer patients: A systematic review and single-arm meta-analysis

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Objective: We performed a systematic review and meta-analysis to assess the incidence and severity of those adverse events (AEs) in metastatic breast cancer (mBC) patients treated with trastuzumab deruxtecan (T-DXd). **Methodology:** We comprehensively searched PubMed, Cochrane, and Scopus databases for randomized clinical trials (RCTs) and observational cohort studies, including mBC patients with HER2-low or -positive expression who have received at least one dose of T-DXd. The DESTINY-Breast02 study was also included after its presentation at the SABCS 2022. Our meta-analysis followed the Cochrane Reviews and PRISMA statement guidelines. The statistical analysis was performed using the R software, and the results are presented as pooled analysis in forest plots. **Results:** We included nine studies: three phase III RCTs, three phase II and two phase I non-RCTs, and one retrospective cohort comprising 1,443 patients with a mean follow-up of 14.9 months. The median age of our population ranged from 53 to 59 years. Most were non-Asian (40.5%) and presented with hormone-receptor-positive mBC (66.8%). In a pooled analysis, the incidence of ILD was 13.0% (179 patients; 95%CI 11.0–13.0). Patients enrolled in phase III clinical trials had an ILD rate of 12.0%, while the observational cohort reported a numerically higher rate of 18.0%. Most ILD cases, 84.9% (152 patients), were mild (grade 1 or 2). Grade 3 or 4 AEs were reported in 13 (7.3%) patients, and grade 5 in 14 (7.8%) patients. We assessed cardiotoxicity by the reduction of left ventricular ejection fraction (LVEF) compared with baseline measures. Decreased LVEF was seen in 3.6% (95%CI 3.0–5.0%), and most patients were asymptomatic. A total of 11 patients developed prolonged QT interval, and four had left ventricular dysfunction and cardiac failure. **Conclusion:** Our meta-analysis reinforces the importance of close vigilance for pulmonary and cardiac toxicities in mBC patients on treatment with T-DXd. Early detection and management by a multidisciplinary team following the most recent guidelines may improve patient outcomes.

Keywords: breast cancer; interstitial lung disease; cardiotoxicity.

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Drug resistance in luminal breast tumors: Results of a novel in vitro breast cancer chemoresistance platform

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Objective: The aim of our preliminary study was to validate a novel *in vitro* chemoresistance platform to predict the response of luminal tumors to cytotoxic drugs commonly used in neoadjuvant settings. **Methodology:** Patients with estrogen receptor (ER)-positive breast cancer tumors who underwent upfront surgery were included. Fresh tumor samples were collected during surgery and dissociated to obtain the tumor cells. The tumor cells were cultured in the chemoresistance platform with anthracyclines and taxanes, and after 72 h, cell viability was evaluated. The test result is defined based on cell viability as low (<40%), medium (40%–60%), and high (>60%) resistance. One BC cell line (MCF-7 (luminal)) was used to confirm the response to the drugs. **Results:** Samples from 13 patients diagnosed with ER+/HER positive and/or negative undergoing upfront surgery were tested in the chemoresistance platform. Nine (69.2%) patients presented luminal A tumors, 2 (15.4%) luminal B, and 2 (15.4%) luminal B/HER2. The chemoresistance platform demonstrated that samples presented higher resistance to taxanes compared with anthracyclines. In taxanes, 75% presented high resistance to docetaxel and 61.6% to paclitaxel, and in anthracyclines, only 15%, and 8.3% presented high resistance to doxorubicin and epirubicin, respectively. To confirm these differences in drug response, we evaluated the cell survival rate of an ER-positive cell lineage (MCF-7) after the treatment with the same drugs using the IC50 (50% inhibitory concentration). In accordance with our previous results, we observed lower rates of high resistance to doxorubicin (34%) and epirubicin (37%) and higher rates using paclitaxel (58%) and docetaxel (67%). **Conclusion:** This preliminary finding highlighted the technique success of the *in vitro* chemoresistance platform and suggested a possible role of intrinsic resistance in the worse response to neochemotherapy of patients with luminal tumors.

Keywords: breast neoplasms; drug therapy; taxanes; anthracyclines; drug resistance.

SIMULTANEOUS ROOM

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Adherence of community health agents (ACS) to a breast cancer screening program – ITABERAÍ project

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Objective: The ITABERAÍ Project is a study that deals with intervention through the training of community health agents (ACS) based on evidence of tracking in physical examination of the breast. The objective of this study was to evaluate the ACS adherence to a breast cancer screening program carried out in the city of Itaberaí. **Methodology:** This is a clinical, controlled, randomized, multicenter, phase III trial, where the observation unit was the ACS in its Family Health Team (ESF). Randomization was performed by a conglomerate, according to the geographic location of the ESF and the respective Basic Health Unit (UBS). The UBS were randomly drawn and allocated into the control group (CG) and intervention group (IG). Information on the sociodemographic profile, life habits, and anamnesis was collected and analyzed. **Results:** A total of 75 ACS participated in the study, where the mean age in the CG was 46.68±8.68 years, and in the IG, it was 49±9.33 years (p=0.27), and the time working as an ACS was 17.09±7.15 years in the CG and 16.38±8.02 years in the IG (p=0.69). There was no significant difference in educational level between the groups (p=0.59). A total of 1,963 women were registered, 1,261 of which by the ACS in the CG and 742 in the IG (p=0.01). **Conclusion:** At the beginning of the study, there was greater adherence by the ACS in the CG compared with the ACS in the IG. This may configure the need for greater training of the ACS of the IG, both to perform the physical examination and in the aspect of how to approach the woman for her inclusion in the study.

Keywords: screening; breast cancer; community health workers.

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Kinesiotherapy and quality of life after breast cancer surgery: A systematic review with meta-analysis

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Objective: To verify whether kinesiotherapy has an influence on the quality of life of women with breast cancer in the postoperative period. **Methodology**: This is a meta-analysis conducted under the recommendations of Cochrane and PRISMA. The search was carried out in the PubMed, Cochrane, and Regional Portal of the Virtual Health Library databases, searching for randomized and observational studies that compared the performance of kinesiotherapy protocols versus the non-performance in patients undergoing breast cancer surgery. The evaluated outcomes were global health status, physical function, emotional function, and social function. Statistical analyses were performed using the RevMan 5.1.7 program, and heterogeneity was evaluated with I^2. **Results:** A total of 190 patients were included in 4 studies, with a mean age of 54.28 (±9.91) years. Of this sample, 139 (73.16%) underwent mastectomy. Three studies performed a before–after evaluation, and one study evaluated intervention versus non-intervention in two different groups. Among the evaluated outcomes, global health status (Std. MD 0.78; 95%CI 0.13–1.43; p=0.02; I^2=87%) and social function (Std. MD 0.53; 95%CI 0.14–0.92; p=0.007; I^2=56%) showed significant results favoring kinesiotherapy. As for the outcomes physical function (Std. MD 1.05; 95%CI 0.04–2.15; p=0.06; I^2=94%) and emotional function (Std. MD 0.53; 95%CI 0.36–1.42; p=0.25; I^2=91%), we did not observe statistical significance. **Conclusion:** Kinesiotherapy can improve the quality of life of women undergoing surgical treatment for breast cancer, especially in terms of overall health status and social functioning. Physical function and emotional function were not benefited by the intervention, but the inclusion of new studies and the increase in the sample size can reverse this result.

Keywords: breast cancer; mastectomy; quality of life.

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Accuracy of stereotactic vaccum-assisted breast biopsy for investigating suspicious calcifications in 2,021 patients at a public hospital in Brazil

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Objective: The objective of this study was to evaluate the accuracy of vacuum-assisted stereotactic biopsy (VASB) in the investigation of nonpalpable suspicious calcifications. **Methodology**: It was a retrospective study from July 2012 to December 2020, in which 2,021 women with suspicious calcifications detected on mammography (BI-RADS 4 and 5) had VASB performed at Hospital Estadual Pérola Byington, São Paulo, Brazil. Fragments were obtained and sent to an anatomopathological study; a metal clip was placed on the biopsy site. Four groups were analyzed, based on the biopsy results: benign, precursor lesions, ductal carcinoma *in situ* (DCIS), and invasive ductal carcinoma (ICD). **Results:** The median age of patients was 55 years (49–63 years). Pathology results on VASB were classified, respectively, as benign n=1,340 (66.3%), precursor lesions n=84 (4.1%), DCIS n=441 (21.8%), and ICD n=156 (7.7%). In the 60 patients whose VASB results were benign because of anatomopathological disagreement, surgery was performed. The following results were obtained: benign n=30 (50%), ICD and DCIS n=21 (35%), and precursor lesions n=9 (15%). The sensitivity of the method was 91.7%, specificity was 97.1%, false negative rate was 3%, positive predictive value was 92.4%, and negative predictive value was 96.9%. **Conclusion:** The VASB method has good accuracy in distinguishing lower and higher-risk lesion groups compared with the gold standard. It has high predictive value in both benign and malignant lesions, guiding therapeutic planning.

Keywords: breast cancer; diagnosis.

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Periodontal disease as a risk factor for breast cancer: A case–control study based on a comprehensive clinical periodontal evaluation

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Objective: The objective of this study was to evaluate the risk association related to periodontal disease and breast cancer performing a prospective case-matched control study. **Methodology**: It was a prospective controlled study, performed to evaluate the possible association with Parkinson's disease (PD) and breast cancer. The Institutional Board for Ethics in Research approved the study (CAAE: 08989019.9.0000.5437). This case–control was designed as a 1:1 propensity study that included 64 volunteers with breast cancer before treatment and 64 women volunteers with no cancer. The cases and matched controls were recruited from the Barretos Cancer Hospital. For matching, cases and controls were matched by age, income of families, education, and smoking status (considered former smoker or current smoker). All of the patients interviewed participated voluntarily and signed an informed consent form. For both groups, women, over 40 years old, have at least 17 teeth, no history of familial breast cancer, no prior cancer, and no history of breast cancer in the family. For the case group, patients with breast cancer diagnosis and who knew about their breast cancer diagnosis were included. For the control group, patients without cancer diagnosis and normal mammographic examination, or if altered, the final finding, showing the absence of neoplasm or risk for breast cancer, were included. For data collection of periodontal parameters, the instrument available in the online version through the website Periodontalchart-online.com/pt developed by the University of Bern, Switzerland, was used. Periodontal indices were measured with the aid of a model periodontal probe from the University of North Carolina. PD indices were considered according to the parameters described by the American Academy of Periodontology **Results:** A total of 128 research participants were included in the study, in two groups, 64 participants without cancer (control group) and 64 patients with breast cancer (case group). The groups were similar related to age, income, education, and smoking. Evaluating oral health parameters, the groups were different. Case groups were associated with better related to the frequency of tooth brushing per day and daily mouthwash uses but worse oral parameters evaluated by mean plaque index, blending on probing, and periodontal probing depth. PD was significantly associated with BC for all case definitions ($p<0.001$). In the multivariable analysis, periodontitis was significantly associated with breast cancer in a sample of severe and moderate periodontitis. Women diagnosed with moderate periodontitis have four times higher odds of having breast cancer than women without periodontitis. Women with severe periodontitis have 10 times higher odds of having breast cancer. **Conclusion:** There is a possible increased risk of breast cancer diagnosis in women with active PD when compared with women without PD. Researchers have developed studies with the referred objective as an alternative to carry out the prevention of pathologies through an important oral health action. New studies need to be carried out to corroborate the findings to formulate public health policies.

Keywords: breast neoplasms; periodontal disease; odds ratio; observational study; case-control studies.

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Screening and diagnosis of breast cancer in older women in Brazil: Why should recommendations be reconsidered?

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Objective: Breast cancer is considered one of the current challenges of population aging. Nevertheless, there is disagreement about screening in older women over 70 years of age due to the lack of prospective, controlled, and randomized studies that include women in this group. The aim of this study was to evaluate Brazilian data on mammography screening and staging of breast cancer in women over 70 years. **Methodology**: This was an ecological time series study. Information on screening and staging of breast cancer in the Unified Health System (SUS) in women over 70 years of age was analyzed and compared with the group aged 50–69 years in Brazil and its five regions from 2013 to 2019. The secondary database was compiled with information from the Outpatient Information System of the Informatics Department of the SUS, the Oncology Brazil Panel, the Brazilian Institute of Geography and Statistics, the Supplementary Health the Supplemental Health Agency, and the Online Mortality Atlas. Trends in rates of mammography screening and clinical staging of breast cancer were analyzed. **Results:** In the regression analysis, a more significant decline in follow-up was observed in the 70+-year-old group, with an APC of –3.5 ($p<0.001$), compared with the 50- to 69-year-old group APC – 2.2 ($p=0.010$). There was a trend toward an increase in the advanced stage, but it was more pronounced in the 70+-year-old group. Clinical staging analysis revealed a higher incidence of stages III and IV in the elderly population (44.3%) compared with the 50–69-year-old group (40.8%; $p<0.001$). **Conclusion:** Considering the aging of the Brazilian population and the heterogeneity of the functional and cognitive status of older women, mammography screening in the group over 70 years of age in SUS needs to be better discussed in the context of public policy implementation.

Keywords: breast cancer; Brazil; aging.

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Breast cancer biomarkers of resistance to neoadjuvant chemotherapy

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Objective: The objective of this study was to identify possible biomarkers of resistance to neoadjuvant chemotherapy (NACT) in breast cancer (BC). **Methodology**: We evaluated microarray gene expression data of BC samples before NACT from three public datasets of the Gene Expression Omnibus database. We performed differential expression analyses comparing patients who presented partial versus pathological complete response (pCR) to NACT in each dataset. Differentially expressed genes with an adjusted p-value less than 0.01 and a logFC greater than 1 or less than –1, identified in more than one analysis, were selected as potentially relevant to tumor resistance. **Results:** The selected datasets were GSE25055, GSE25055, and GSE20194, containing 306, 182, and 178 samples. These datasets present heterogeneous data, with different subtypes of BCs (luminal, luminal/HER2, HER2, and triple-negative) and treatments used in the NACT, such as FACT and FECT in GSE20194 and Taxol and Taxotere in GSE25065. Our differential expression analysis identified 43 genes for the dataset GSE25055, 13 for GSE25055, and 30 for GSE20194. Despite the high heterogeneity of the datasets, we identified the genes CCND2, SNX15, and TTC4, which were common to at least two analyses. The CCND2 and TTC4 genes are upregulated, while SNX15 is downregulated in patients with partial response compared with those presenting pCR. The CCND2 gene has low expression in BC and is related to a worse prognosis. Our result showed an inverse relationship; CCND2 is overexpressed in patients with a partial response to NACT. The expression of the TTC4 gene is previously known in breast tumors, and the functions of the SNX15 gene in breast tumors are still poorly understood in the literature. **Conclusion:** These results can contribute to a better understanding of the mechanisms involved in intrinsic tumor resistance to NACT, allowing the development of personalized therapeutic strategies.

Keywords: breast neoplasms; neoadjuvant chemotherapy; drug resistance; gene expression.

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Real-world evidence of predictors of pathologic complete response and impact on overall survival in breast cancer patients treated with neoadjuvant chemotherapy

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Objective: The aim of this study was to identify predictors of pathological complete response (pCR) with an impact on overall survival (OS) in patients with breast cancer (BC) treated with neoadjuvant chemotherapy (NAC). **Methodology**: This is a retrospective cohort study conducted at the Centro de Referência em Saúde da Mulher – Hospital Pérola Byington and included women diagnosed with BC between 2011 and 2020. Survival data were reported using the Kaplan-Meier method, and subgroups were analyzed using the log-rank test. The study explored complete pathological responses between groups (with and without response) to identify any clinical or demographic differences. The Cox regression model will be used to analyze the relationship between independent factors and the pCR outcome, with the hazard ratio calculated. The study was approved by the Brazil Platform (CAAE 64633422.4.0000.5463). **Results:** The study involved 1,601 patients who underwent NAC and surgical treatment for BC. The rate of pathological complete response (pCR) in patients who received NAC was 22.8%, while the rate of non-pCR was 77.2% (p<0.0001). The 5-year prognosis for patients with pCR was better, with an OS of 89%, compared with 61.0% in non-pCR patients (log-rank p<0.0001). Factors related to pCR that had an impact on OS were premenopausal status (HR 0.79, 95%CI 0.64–0.98, p=0.032), clinical stage IIB (HR 0.66, 95%CI 0.46–0.96, p=0.029), negative hormonal receptor status (HR 1.39, 95%CI 1.13–1.71, p=0.002), and HER-2 positivity (HR 0.79, 95%CI 0.64–0.97, p=0.025). **Conclusion:** The pCR is a favorable prognostic factor that is associated with increased OS, especially in patients who are hormone receptor-negative, HER-2 positive, and in clinical stage IIB. These factors demonstrate a significant correlation between pCR and OS.

Keywords: breast cancer; neoadjuvant chemotherapy; prognosis.

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Immunotherapy vaccines for triple-negative breast cancer and its influence on the tumor microenvironment

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Objective: Cancer is still a complex and debilitating disease even though advances in treatment have occurred. Triple-negative breast cancer (TNBC) is an aggressive subtype of breast cancer with a poor prognosis and occurs more frequently in young women. Due to its metastatic features and unique tumor microenvironment, TNBC treatment is limited. In this study, we evaluated how three chemotherapy drugs could be used to produce vaccines with cells under immunogenic cell death. **Methodology**: For that, 4T1-luc2 cells were treated with cisplatin (100 μM), mitoxantrone (MTX) (15 μM), and doxorubicin (DOX) (50 μM) for 24 h. Then, the treated cells were injected subcutaneously in tumor-bearing Balb/c female mice, after the tumor challenge. The treatment occurred three times, once a week. During and after the treatment, primary tumor and metastatic progression were followed using the chemiluminescence technique. After 5 weeks of the tumor challenge, mice were euthanized and organs (liver, tumor, lungs, and spleen) were collected for analysis. Additionally, the spleens were processed for flow cytometry for regulatory T lymphocyte and myeloid-derived suppressor cells analysis. **Results:** Cisplatin and MTX vaccines slowed the primary and metastatic tumor growth as well as the decreased tumor, liver, and spleen weight, while the DOX vaccine slowed the metastatic tumor progression in the lungs but did not alter tumor and other organs' weight. Moreover, cisplatin and MTX vaccine increased the ratio of lymphocytes in the spleen but not the DOX vaccine. All comparison was done regarding the tumor-bearing mice treated with PBS. **Conclusion:** Taken together, both MTX and cisplatin vaccines treated primary and secondary tumors probably by the increase of lymphocyte recruitment, and the cisplatin vaccine also has an influence on the tumor microenvironment. Finally, the therapeutical vaccine might be an interesting approach as a treatment for TNBC due to its positive effect on metastasis and tumor microenvironment, especially with cisplatin.

Keywords: vaccine; breast cancer; immunogenic cell death.

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Evaluation of upper limb lymphedema using spectroscopic bioimpedance in a Brazilian population

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Objective: Upper limb lymphedema secondary to breast cancer treatment is a disabling, chronic, and often incurable sequel, resulting from lymphatic insufficiency. There are several methodologies for diagnosing lymphedema, such as volumetrics (considered the gold standard), perimetry (the method most used in clinical practice due to its ease of application), perometry, lymphoscintigraphy, and computed tomography, which are high-cost equipment and are not superior to other methods, and spectroscopic bioimpedance (BIS), which allows the early diagnosis of lymphedema. Early detection is related to lower costs in the treatment of this comorbidity and less impact on the quality of life of these women; however, there are still no studies using BIS to assess lymphedema in the Brazilian population. The aim of this study was to analyze the validity of BIS as a method for diagnosing lymphedema in Brazilian women undergoing treatment for breast cancer and compare it with other methods. **Methodology**: A cross-sectional prospective study was carried out at Hospital de Amor, evaluating 462 women undergoing treatment for breast cancer, from May 2015 to January 2021. Lymphedema was evaluated using different methodologies. BIS results were compared with direct volumetry. L-Dex® technology/BIS equipment from ImpediMed® was acquired using FAPESP grant under the number 2014 08197-0. The study was approved by the local ethics committee under the numbers 782/2014 and CAAE 28140214.1.0000.5437. **Results:** When comparing patients with lymphedema diagnosed by direct volumetry with those diagnosed by BIS, BIS did not diagnose lymphedema in 52 of the 93 patients with lymphedema. BIS sensitivity was 44.1%, specificity 95.4%, PPV was 70.7%, NPV was 87% and Kappa was 0.459. When performing the ROC curve between BIS and volumetry, a good area under the curve was obtained (AUC=0.75) and a possible cutoff point of L-Dex® ^{3}7.35 with a sensitivity of 57%, a specificity of 90.9%, and kappa value=0.489. **Conclusion:** BIS showed low sensitivity and concordance and did not prove to be a valid method for diagnosing lymphedema in Brazilian women.

Keywords: lymphedema; ROC curve; prospective study; breast neoplasms.

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Impact of the COVID-19 pandemic on cancer care in 2020 and 2021 in a Brazilian healthcare center

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Objective: The objective of this study was to evaluate the impact of the coronavirus pandemic on the care of cancer patients in the years 2020 and 2021 compared with the pre-pandemic period in the oncology service of the Hospital das Clínicas of the Universidade Federal de Goiás. **Methodology**: This is an observational, analytical, and cross-sectional study that was carried out by collecting data from medical records and the Internal Regulation Center database. The periods of time evaluated during the pandemic were March to May 2020 and March to May 2021. Data from these periods were compared with data from March to May 2019, a period that preceded the pandemic. The association between patients' vital status and age group, sex, tumor, treatment, and staging was analyzed using Pearson's chi-square test followed by the analysis of standardized residuals whenever statistically significant differences were found. The data were analyzed using the Statistical Package for the Social Sciences, version 26.0. The significance level was set at 5% ($p<0.05$). **Results:** Compared with the pre-pandemic period, there was an increase in patient visits of 11.0% and 6.5% in 2020 and 2021, respectively. However, there was a reduction in new cases of 44.7% and 57.5% in 2020 and 2021, respectively, and these differences were statistically significant ($p=0.04$). Regarding indications for intravenous or oral therapy, a statistically significant difference was found compared with the pre-pandemic period only for the second period of the pandemic studied (2021), with a more than twofold increase in the prescription of oral therapy and a consequent reduction in intravenous therapy. **Conclusion:** This observational study allowed the impact of the COVID-19 pandemic to be evaluated over two different periods (2020 and 2021), with results showing a significant reduction in the number of new cases seen in the cancer center of this institute due to restrictions in the services provided including a variety of medical specialties, screening tests, and elective surgery, in addition to the fact that admissions to hospital focused on patients infected with the virus. These data confirm the implications of access to treatment for cancer patients during the pandemic.

Keywords: breast cancer; pandemics; coronavirus.

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Comfort program: Accessible strategy to give voice to a little heard patient

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Objective: We analyzed the accessibility of a virtual program developed for women with advanced cancer undergoing chemotherapy treatment by the Unified Health System. We ranked the benefits of participating in the program according to the patient's experience. **Methodology**: A longitudinal study of quantitative and qualitative was carried out with 78 women diagnosed with locally advanced and/or metastatic breast and gynecological cancer. All participants used the Comfort Program for at least one chemotherapy cycle over the 6 months of the study. We carried out a semi-structured interview to absorb the experience throughout the participation in the program. Data were analyzed with descriptive and inferential statistics, using Student's t-test and Pearson's correlation test. Qualitative analysis was performed by two independent evaluators using Bardin's content analysis method. **Results:** There was no correlation between the frequency of participation in the program and social factors (age, education level, and income). Most of the participants reported more about their symptoms to the oncologists (70.4%; N 57), the oncologists encouraged their participation in the program and helped with the reported symptoms (60%; N 52), and 91% (N 75) of the patients denied difficulties with understanding of the guidelines offered throughout the participation. The program was classified according to three categories: practicality with the use of the Internet, welcoming space, and ease of reaching help/referrals. The difficulties were related to physical discomfort, forgetfulness, and the unavailability of the internet. **Conclusion:** In another study, we found benefits of using the Comfort Program in the management of symptoms during chemotherapy. In this study, in addition to numbers, patients brought their own perception of the program and we identified that it is an accessible strategy, facilitating communication between patients and care providers. Regardless of the frequency of participation, women showed greater attention to discomfort, which may suggest greater tolerance to chemotherapy treatment.

Keywords: telemedicine; psycho-oncology; eHealth strategies; breast neoplasms.

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Clinical and pathological differences between HER2 low and other cancer subtypes in breast cancer patients

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Objective: HER2 is a tyrosine kinase receptor belonging to the human epidermal receptor family and is considered an important proto-oncogene in the biology of breast carcinoma. HER2 overexpression is determined by a +3 score on the immunohistochemistry (IHC) assay. In addition, tumors with IHC results of +1 or +2 with ISH negative were defined as HER2-low. Recent studies have shown the clinicopathological characteristics of HER2-low tumors, pointing out potential differences regarding hormone receptor status. The objective was to assess clinicopathological differences between cancer subtypes, as well as the survival of these patients. **Methodology**: A total of 8,872 patients with breast cancer diagnosed between 2010 and 2019 included in the Pérola Byington Hospital database were eligible. Patients were excluded if they had bilateral disease, had participated in clinical studies, or had incomplete data. The primary endpoint was overall survival stratified by cancer subtype, and the secondary endpoints were clinicopathological differences between cancer subtypes and death probability. Both the t-test and the chi-square test were used to analyze the association of each variable between the groups. Multivariate analysis was used to calculate odds ratios and 95% confidence intervals for the death outcome. Cox regression was used for survival analysis, with the log-rank method, and the results were presented in a survival graph using the Kaplan-Meier method. The R software version 4.1.1 was used to perform all analyses, with a $p<0.05$ being considered statistically significant. **Results:** A total of 8,872 patients were included: 3,865 (43.65%) had luminal cancer subtype, 1,840 (20.74%) had HER2 low, 1,610 (18.156%) had triple-negative, and 1,557 (17.55%) had HER2 overexpression. In the multivariate regression (adjusted for the other evaluated characteristics), Her2 low had a median of 101 months of survival compared with 96 months for triple-negative. When comparing HER2 low with hormonal receptor positive versus negative, we saw better survival in hormonal receptor positive (90 vs. 101 $p<0.001$). These data did not differ among stages. As an additional finding, Ki67 is prognostic for survival and so is pCR. **Conclusion:** This study in breast cancer patients demonstrates significant differences between cancer subtypes, with a higher probability of progression to death for patients with triple-negative cancer. More studies are needed to clarify the impact of these differences between cancer subtypes on response to therapy.

Keywords: breast cancer.

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How long does it take to start breast cancer treatment in Brazil? Is the 60-day law fulfilled?

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Objective: The aim of this study was to evaluate compliance with the law of 60 days to start breast cancer (BC) treatment in Brazil. **Methodology**: This is an ecological observational study, based on retrospective data from a National Oncology Database (DATASUS – SISCAN/Cancer Information System) that is publicly available for download. Oncological treatment data from 2017 to 2021 were selected, referring to the time from the diagnosis of BC to the beginning of the first oncological treatment. Only data with all available variables were considered, and an analysis was performed by federative unit and by region of Brazil. **Results:** In the 5-year study period, 202,371 patients with BC treatment in Brazil were included in the SUS, being in the north region 11,198 (5.5%), northeast region 46,775 (23.1%), southeast region 90,151 (44.6%), south region 41,288 (20.4%), and midwest region 12,959 (6.4%). BC treatment in Brazil begins in 50% of patients within 60 days of diagnosis; however, 16.3% take up to 90 days, 11.3% take up to 120 days, 19.8% take up to 300 days, and 2.6% take longer than 301 days. With regard to the regions that comply with the 60-day law, it is the north region with 65% of treatments initiated within 60 days and the one that least complies is the southeast with 45.7%, with a significant difference between the regions (p=0.0363). Likewise, the state that best complies is Rondônia with 84.5% and the one that least complies is Rio de Janeiro with 39.1%, with a significant difference in all states in relation to their region (p>0.0001). **Conclusion:** It is observed that compliance with the 60-day law is much lower than expected, where only 50% of patients in Brazil start their treatment within 60 days, and in many states, more than 1/4 of patients take more than 120 days to start, with an impact on prognosis.

Keywords: breast cancer; treatment; prognosis.

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Predictors of biopsychosocial distress in women with locally advanced and/or metastatic breast cancer

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Objective: The objective of this study was to identify predictors of biopsychosocial distress in women with locally advanced and/or metastatic breast cancer. **Methodology**: This is a quantitative cross-sectional study carried out with 125 women with locally advanced and/or metastatic breast cancer. The Palliative Performace Scale, the Edmonton Symptom Assessment Scale, and a sociodemographic questionnaire were used. Data were analyzed using descriptive and inferential statistics. We used the Shapiro-Wilk test and the Spearman correlation matrix. **Results:** The performance of patients had a mean of 39 and median of 40 (0–100), and survival after referral to palliative care was 75.96 days, median 13 (SD 144.73; 1–618). The most intense symptoms were lack of appetite (mean 6.59; SD 3.58; 0–10), anxiety (mean 6.05; SD 3.76; 0–10), and fatigue (mean 5.86; SD 3.63; 0–10). Pain and nausea were correlated with worse performance ($p<0.05$) and distress with worse fatigue, sadness, anxiety, lack of appetite, dyspnea, and malaise ($p<0.05$). Younger age was a predictor of higher levels of anxiety, malaise, and distress ($p<0.05$). **Conclusion:** Our results suggest that younger patients are more prone to psychosocial distress, especially showing greater lack of appetite, anxiety, and fatigue. For equitable and comprehensive care, it is necessary to implement symptom screening strategies, as well as interprofessional management, according to the correlation between experienced symptoms.

Keywords: integrative palliative care; emotional distress; breast neoplasms.

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Tumor profile and treatment used in elderly women with breast cancer in a tertiary referral hospital

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Objective: The aim of this study was to describe the tumor profile and treatment used in elderly women diagnosed with breast cancer treated and followed up at a tertiary referral hospital. **Methodology**: This is a cross-sectional study with all women aged over 60 years, survivors of breast cancer, who were being followed up at the Mastology Section of the Hospital das Forças Armadas/Brasília/Federal District/Brazil, whose consultations were carried out between January 1, 2015 to December 31, 2021. **Results:** There were 106 women diagnosed with breast cancer after 60 years of age, 50.94% of whom were 70 years of age or older and 93.19% were symptomatic at diagnosis. Invasive ductal carcinoma of luminal subtypes predominated. Notably, 62% were in stages I and IIa, but it was seen that, in 53.84% of the cases, mastectomies were performed and only 25.52% used immediate breast reconstruction techniques. Chemotherapy, radiotherapy, and hormone therapy were performed as indicated. **Conclusion:** The elderly women in this study had mostly invasive ductal carcinoma, luminal, stages I and IIa. Mastectomy with sentinel lymph node biopsy was the most commonly performed surgery with a low percentage of immediate breast reconstruction. Age did not influence the indication of adjuvant and neoadjuvant therapies.

Keywords: breast neoplasms; aged; mastectomy; reconstructive surgical procedures; epidemiology.

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The use of epigenetics in the treatment of triple-negative breast cancer, focusing on lncRNA

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Objective: In triple-negative breast cancer (CMTN), the standard therapeutic procedure is usually not very effective due to the aggressiveness of the disease. Therefore, it is important to identify and characterize new forms of treatment for this neoplasm. In this context, the study of the genetic material of diseases has gained notoriety among alternative forms of therapy, as long non-coding RNAs (lncRNAs) have been identified in neoplastic cells. Therefore, the aim of this study was to evaluate the use of epigenetics in the treatment of CMTN, with emphasis on lncRNAs. **Methodology**: A systematic review of the specialized scientific literature was carried out, in the PubMed database, with the descriptors: "breast cancer," "epigenetic," and "treatment"; the Boolean operator: "AND"; and the filters: "free full text," "adults: 19+ years," and publication date from 2021 to 2023. A total of 32 articles were identified, with 3 included **Results:** Epigenetics influences the treatment of breast cancer; as the lncRNA was found in neoplastic cells, it was possible to monitor the prognosis of the disease. The lncRNA Uc003xsl.1 was associated with a poor prognosis, as it was related to advanced stages of CMTN, increasing the transcriptional activity of NFkB, which promotes tumor progression. On the contrary, the lncRNA LINC00472 proved to be a marker of good prognosis, as it inhibited the proliferation, invasion, and migration of neoplastic cells in the CMTN. Furthermore, with regard to breast cancer, lncRNA IGF-2AS proved to be an important biomarker, as it slows tumor growth in vivo, repressing malignancy and tumor progression. Therefore, lncRNAs have gained notoriety in treatment as regulators of breast cancer tumorigenesis. **Conclusion:** Thus, the use of epigenetics in the treatment of CMTN has proven to be essential to curbing neoplastic cells, as it interferes with tumor proliferation in different ways, either by influencing transcription or by slowing down growth.

Keywords: breast cancer; treatment; epigenetics.

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Better aesthetic results after oncoplastic surgery than after total breast reconstruction according to patients and surgeons

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Objective: Patient satisfaction after breast cancer surgery has an impact on body image, sexual life, self-esteem, and quality of life and may differ from the surgeon's perception. The objective of our study was to compare the aesthetic results and satisfaction after breast conservation and oncoplastic surgery with mastectomy and total breast reconstruction. **Methodology**: We included 760 women with breast cancer or phyllodes tumors, who returned after at least 6 months from surgery or radiotherapy at two public hospitals and one private clinic between 2014 and 2022. Data were collected from medical records and patient interviews, after signing the informed consent. Aesthetic outcomes and quality of life were evaluated using the BREAST-Q, Harris scale, and BCCT.core software. Data were analyzed using the SPSS statistical package. A p-value <0.05 was considered statistically significant. **Results:** A total of 405 (53.29%) partial reconstructions and 355 (46.71%) total reconstructions were performed. Patients undergoing partial reconstruction were older and had a higher body mass index. Patients undergoing total reconstruction had larger tumors, higher clinical and pathological staging, and more complications. There was a higher need for reparative surgeries and lipofilling in total reconstructions. Women's satisfaction with their breasts, satisfaction with the results, psychosocial and sexual well-being, satisfaction with information, and satisfaction with the reconstructive surgeon were significantly higher in the partial reconstruction group, according to the BREAST-Q. Only physical well-being was slightly higher in total reconstructions. Results were qualified as good or excellent in most cases. Physicians considered the results of partial reconstructions to be better than those of total reconstructions, although this difference was not perceived by the BCCT.core software. **Conclusion:** Women who underwent partial breast reconstruction had higher levels of satisfaction in several domains and less frequent complications and needed fewer procedures to complete the reconstruction than women who underwent total reconstruction. Physicians were also more satisfied with partial reconstruction results.

Keywords: breast cancer; mammaplasty; mastectomy; breast reconstruction; patient satisfaction.

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Extreme oncoplasty: Past, present, and future

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Objective: Recently, a new paradigm has been considered for mastectomy candidates with large multifocal and multicentric tumors, designated extreme oncoplasty (EO), which has evolved into new techniques for breast-conserving surgery (BCS) to be performed in tumors with limited conditions for BCS. At present, there are few publications, and there is no uniform description grouping all technical possibilities and new indications. The objective was to perform a systematic review about EO. **Methodology**: Based on resolution 466 from 12/12/12, it is not necessary to be evaluated by the Ethics Committee. A systematic review was conducted to evaluate the indications and surgeries performed in the context of EO. We used PICO for article evaluation: Problem = breast neoplasm; Intervention = OS, EO, or reconstructive surgical procedures; Comparison = all; and Outcome = indication and type of surgery. A literature review was performed by screening two databases (PubMed and LILACS). To evaluate articles in PubMed, we used the terms: ((("breast neoplasms"[Mesh]) AND ("surgery, plastic"[Mesh] OR "plastic surgery procedures"[Mesh] OR "mammaplasty"[Mesh] OR "mastectomy, segmental"[Mesh])) AND ("oncoplastic surgery" OR "oncoplasty" OR "oncoplastic" OR "extreme oncoplasty" OR "extreme oncoplastic" OR "regional flaps" OR "geometric compensation")). The terms used in LILACS were "neoplasias da mama" and "procedimentos cirúrgicos reconstrutivos"; "neoplasias da mama" and "cirurgia oncoplastica ou oncoplastia." **Results:** Initially, 787 articles were identified from the PubMed database. The titles and abstracts were evaluated, and 140 articles were selected for reading. After content evaluation (November 30, 2022), 39 articles were selected for this study. Specifically, for EO, 23 original articles and 4 comments were evaluated. Silvertein suggested the term EO and the articles selected here. Paulinelli considered the term GC using wise pattern resection, and similar articles were selected. We found articles related to preoperative care, traditional indications, increased indications, and casuistic and case reports. Quality of life was evaluated. In addition, four replies were published. We found two articles on LILACS, one of which was included. Classical indications were tumors larger than 5 cm and multifocal and multicentric tumors, which the initial surgery to be considered was mastectomy. New indications were (1) breast tumor unfavorable ratio; (2) extensive microcalcifications or extensive CDIS; (3) new or recurrence in irradiated breasts; (4) locally advanced breast carcinoma with partial response to chemotherapy; (5) inappropriate scare; and (6) medium and low breast with ptosis. New situations are small- to moderate-sized non-ptotic with centrally located breast cancer, small- to moderate-sized breast and flaps. We observed new options, including general discussions, partial breast amputation, regional flaps, and other techniques. **Conclusion:** EO represents a new paradigm related to BCS. It is important to discuss the technical possibilities, improving the number of patients to be selected for these surgeries.

Keywords: breast neoplasms; breast-conserving surgery.

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Bilobed LICAP for breast conservation: Technique description and 10-year retrospective cohort results

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Objective: The bilobed flap is a useful double transposition flap technique for covering skin defects, particularly in the face. Lateral intercostal perforator vessel flaps (LICAPs) are a valuable volume replacement oncoplastic technique for the outer quadrants. A plastic surgeon in Brazil has modified the bilobed flap for use in the breast, especially for tumors located in the upper inner quadrants. The aim of this study is to describe a new modification, called bilobed LICAP, for tumors located in the central quadrants or nearby, and our results after 10 years. **Methodology**: From 2013 to 2023, we identified 37 patients submitted to this technique, with large malignant breast tumors near or involving the skin in the central quadrants or nearby, who did not have ptosis or did not wish to correct it, and for whom this new modified bilobed flap technique avoided mastectomy. These patients were operated on by the same breast oncoplastic surgeon in different institutions, and this is part of a research project approved by our ethical committee (n. 2.322.212). **Results:** The mean age of patients was 56.23 (±13.57) years, and the estimated breast volume was 350 (±124.74) g. A total of 24 (88.89%) women had grade 0 or 1 ptosis. The mean specimen weight was 105.89 (±127.00) g, and the mean clinical tumor size was 45.00 (±16.49) mm, with tumors up to 75 mm. There were 13 (35.14%) tumors larger than 5 cm and one multicentric tumor. Notably, 34 (91.89%) patients had invasive ductal carcinomas. Round incisions over the tumor were performed in 36 (97.30%) cases, and the skin was preserved, and part of the flap de-epithelialized in one case. Nipple areola complex was removed due to clinical involvement in 19 (51.35%) cases. In two of these cases, the nipple and areola were immediately reconstructed with contralateral free grafting. A total of 20 (54.05%) patients required neoadjuvant chemotherapy, and 10 (27.03%) received adjuvant chemotherapy. Four patients received anti-HER therapy (13.04%) and 20 (86.96%) received hormone therapy. Three (8.11%) patients underwent immediate contralateral mastopexy due to previous asymmetry. Radiotherapy was indicated in all cases. Notably, 18 (88.24%) patients received hormone therapy. There were 3 (8.11%) minor complications, including one case of hyperemia treated with antibiotics, one small hematoma treated clinically, and one case of palpable lump and retraction due to fat necrosis in a patient with previous mammoplasty. There was one case of focally positive margin, treated with radiotherapy, without re-excision. Intraoperative pathological margin evaluation was performed in 14 (46.77%) cases. There were no cases of dehiscence, skin necrosis, seroma, enlarged scars, thromboembolism, or other complications. All patients were satisfied, and none of them required surgical revision. There were no cases of conversion to mastectomy. Notably, 19 (51.35%) patients returned after radiotherapy for aesthetic follow-up and evaluation with the oncoplastic surgeon. The rest continued their follow-up with other surgical or clinical oncologists. In a median follow-up of 20 (13–66) months, there were no cases of local recurrence, metastasis, or death. According to the BREAST-Q, patient satisfaction with their breasts was 74.41 (±17.92), satisfaction with the results was 91.06 (±11.89), psychosocial well-being was 80.19 (±17.12), sexual well-being was 75.92 (±24.63), physical well-being was 68.25 (±14.05), satisfaction with information was 84.64 (±15.83), and satisfaction with the surgeon was 97.67 (±6.95). Aesthetic results were rated as good or excellent in 17 (89.47%) cases by the Harris scale and in 14 (73.68%) by the BCCT.core software. **Conclusion:** The new technique allowed for breast conservation in all cases, even those requiring large central resections on proportionally small breasts with limited ptosis. The procedure resulted in high rates of free surgical margins, good or excellent symmetry in most cases, no need for surgical revisions, and few complications.

Keywords: breast neoplasm; mastectomy, segmental.

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Screening for ocular tamoxifen toxicity versus neurological metastasis in breast cancer: A systematic review

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Objective: A systematic review was carried out comparing the clinic and management of tamoxifen (TAM) retinopathy and neurological metastasis after breast cancer. **Methodology**: In this study, we performed a systematic review of the literature. We searched for relevant papers published in electronic databases PubMed, Lilacs, SciElo, and ScienceDirect, from 2004 to 2023. We used the keywords "tamoxifen" AND "retina" AND "breast cancer" AND "neural metastasis" and similar operative words in Portuguese and Spanish. The work was done according to PRISMA guidelines, on March 2023. After the eligibility criteria, we included 16 papers. **Results:** TAM has application in breast cancer due to its effects on the upregulation of transforming growth factor B and downregulation of insulin-like growth factor 1, preventing tumor growth and appearance of metastasis. Moreover, TAM binds to estrogen receptors present in breast and neural retina tissue. While the risk of metastases, including neurological tumors, implies a powerful reason to prescribe TAM, we must keep pharmacovigilance on ocular toxicity, which starts with retinopathy, progressing to corneal changes and neuritis — all with symptoms that mimic neoplastic and paraneoplastic symptoms on nervous tissue. Even though the retinopathy is associated with high doses of TAM, the ocular toxicity is not derisory, resulting in visual impairment symptoms, dry eye, and paracentral corneal opacities — all these being reversible upon discontinuation of the medicine, unlike neoplastic disease. **Conclusion:** Although the use of a low dose of TAM performs safely for the majority of people, there is a myriad of ophthalmic events that can cause anxiety in routine appointments, both for the health team and for the patient. With that in mind, we must advocate for greater attention to early screening of symptoms and cost–benefit evaluation of dose maintenance to minimize side effects and promote a better quality of life.

Keywords: breast neoplasms; neoplasm metastasis; pharmacovigilance; tamoxifen; toxicity; vision disorders.

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Negative impact of adjuvant endocrine therapy on sexual function in breast cancer survivors

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Objective: The objectives of this study were to evaluate the sexual function of postmenopausal breast cancer survivors compared with women without breast cancer and assess the impact of adjuvant breast cancer treatment on sexual function. **Methodology**: A cross-sectional study was conducted on 178 breast cancer survivors, stages I–III, age 45–70 years, amenorrhea for ^{3}12 months, and sexually active, compared with 178 women with the same inclusion criteria, but without breast cancer. The groups were paired by age and menopause time, ratio 1:1. Sexual function was assessed using the Female Sexual Function Index (FSFI), consisting of six domains (desire, arousal, lubrication, orgasm, satisfaction, and pain), in which a total score ≤ 26.5 indicates sexual dysfunction. For statistical analysis, the Student's t-test, the chi-square test, and logistic regression (odds ratio (OR)) were used. **Results:** Women with breast cancer had poorer sexual function in the desire domain (p=0.002). There were no significant differences between groups in the other FSFI domains and in the total score (p>0.05). Breast cancer survivors had a higher occurrence of sexual dysfunction (64.6% with a total score ≤26.5) when compared to the control group (51.6%) (p=0.010). Risk analysis adjusted for age and time since menopause showed a higher risk of sexual dysfunction in breast cancer survivors than women without cancer (OR 1.98, 95%CI 1.29–2.96, p=0.007). Among breast cancer survivors, the use of endocrine therapy was associated with a higher risk of sexual dysfunction (OR 3.46, 95%CI 1.59–7.51, p=0.002). **Conclusion:** Postmenopausal breast cancer survivors had a higher risk of sexual dysfunction when compared with women without breast cancer, impacted by the use of endocrine therapy for the treatment of breast cancer.

Keywords: breast cancer; menopause.

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Serum hemoglobin and relation to the staging of patients with breast cancer before the start of radical radiotherapy

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Introduction: Among cancers, breast cancer is the leading cause of death from cancer in Brazilian women, second only to lung cancer worldwide. Few data are available in the literature portraying the prevalence of lower hemoglobin levels in cancer patients, especially if related to a worse prognosis with a more aggressive disease. Therefore, scientific studies are needed to make the relationship with such a pathology consistent. **Objective:** The objective of this study was to assess serum hemoglobin levels and whether this is associated with worse staging in patients with breast cancer indicated for radiotherapy treatment. **Methodology:** This is a prospective, descriptive, and longitudinal study with patients with breast cancer referred for radical radiotherapy, through the evaluation of blood hemoglobin and its initial staging. **Results:** We evaluated 40 patients with a mean age of 63.7 years (30–81/95%CI 60.4–67/SD±10.3). Mean serum hemoglobin was 12.6 g/dl (9–15.3/95%CI 12.1–13.1/SD±1.4). Four (10%) patients stage Ia, 9 (22.5%) stage Ib, 9 (22.5%) stage IIa, 11 (27.5%) stage IIB, and 7 (17.5%) stage IIIa were observed. A cohort study was conducted on patients, classifying them into group 1 with 13 patients (32.5% — stages Ia and Ib), group 2 with 20 patients (50% — stages IIa and IIb), and group 3 with 7 patients (17.5% — stage IIIa). The mean hemoglobin in group 1 was 13.9 g/dl (95%CI 13.4–14.4/SD±0.9), mean hemoglobin in group 2 was 12.5 g/dl (95%CI 12.3–12.7/SD±0.5), and in group 3, mean hemoglobin was 10.4 g/dl (95%CI 9.3–11.5/SD±1.2) ($p<0.001$), demonstrating the existence of a statistically important relationship between worse staging and lower plasma hemoglobin levels. **Conclusion:** Patients with a worse prognosis may have lower plasma hemoglobin levels, which may demonstrate greater tumor aggressiveness in these patients.

Keywords: anemia; breast neoplasms; prognosis; radiotherapy; hemoglobins.

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COVID-19 and breast cancer in elderly women in Brazil

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Objective: There are no publications on the impact of the COVID-19 pandemic on screening and clinical staging of breast cancer in women over 70 years of age. In Brazil, women over 70 years of age are not the target group for whom the Unified Health System (SUS) recommends mammography screening. This study aimed to evaluate the impact of the pandemic in Brazil on screening and clinical staging of breast cancer in women of this age group. **Methodology**: This is an ecological time-series study. Data and trends, as well as the staging of breast cancer in older women in the SUS, from 2013 to 2021, in Brazil and its regions were analyzed. The secondary database was created with information from the Outpatient Information System of the Informatics Department of the SUS, the Oncology Brazil Panel, the Brazilian Institute of Geography and Statistics, and the Supplementary Health Agency. **Results:** In 2018–2019, 16,035 cases of breast cancer were reported nationwide, representing a decrease of 3.75%, and 15,434 cases were reported in 2020–2021. Screening tended to decrease with APC -7.3 (CI -11.3 to -3.2; $p<0.004$). The proportion of advanced cases exceeded that of initial cases in Brazil overall. There was an increasing trend for stages III and IV, with a coefficient of determination (r^2) of 0.86 ($p<0.001$) and a percentage increase of 9.4% of cases ($p<0.001$). **Conclusion:** During the pandemic, there was a significant decrease in the number of mammograms and a significant increase in older patients with advanced tumors. It is important to provide screening and treatment services for breast cancer in women over 70 years of age so as not to neglect the needs of these older women.

Keywords: breast cancer; COVID-19; Brazil.

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Influence of surgical clip and oncoplasty on breast, heart, and lung volumes irradiated during boost radiotherapy in breast cancer

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Objective: The objective of this study was to evaluate the irradiated volumes of the breast, heart, and lung, considering the presence of the surgical clip and the oncoplasty techniques **Methodology**: This is a retrospective study of women submitted to boost radiotherapy tumor bed after breast conservative surgery between January 2011 and January 2021. Statistical analysis using Student's t-test (95%CI; $p<0.05$). It was considered volumes of lung and heart relative to 40% of the prescribed dose in the boost radiation planning (V40 Lung) (V40 Heart) and 100% in the breast and boost volume (V100 Breast) (V100 Boost), which were compared by oncoplastic techniques and surgical clips using the dose-volume histogram in three-dimensional conformal radiotherapy. **Results:** This study evaluated 183 women. For the entire group, regardless of the oncoplasty, when the patient was clipped, there was a significant difference between the mean boost volumes. In the group of patients without oncoplasty, there was a significant difference between the mean boost volumes: V100 Boost=95.66 cm^3 (PD±42) in the presence of 1–2 clips and V100 Boost=90.99 cm^3 (PD±34) in the presence of 3 or more clips, when compared with non-clipped: V100 Boost=255.23 cm^3 (PD±162) ($p<0.001$), and the difference in mean breast volumes was also significant, in the presence of 1–2 clips, V100 Breast=233.31 cm^3 (PD±122), when compared with non-clipped breast: V100 Breast=368.71 cm^3 (PD±232) ($p=0.032$). There was no statistically significant difference in the mean heart and lung volumes analyzed. **Conclusion:** The presence of the clip significantly reduced the mean boost volume for the entire group. For those who did not undergo oncoplasty, the presence of the clip made it possible to reduce the mean volume of the breast, when one to two clips were inserted. In those undergoing oncoplasty, the presence of the clip increased the cardiac volume. There was no significant difference in the mean lung volumes.

Keywords: breast cancer; radiotherapy; surgical clip.

TV'S SESSION: EXHIBITION AREA

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Is breast-conserving surgery for patients with locally advanced breast cancer who have undergone neoadjuvant therapy associated with a better survival rate?

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Objective: It is known that breast-conserving surgery (BCS) is oncologically safe for breast cancer after neoadjuvant treatment (NAT). Besides that, recent data imply better overall survival in early breast cancer, but it remains uncertain in locally advanced breast cancer (LABC). The aim of this study was to compare the superiority of the BCS on LABC after NAT when compared with mastectomy (MS). **Methodology:** It is a single-center retrospective cohort study on 530 patients with LABC who received NAT and underwent surgery, BCS or MS, between 2010 and 2015. Outcomes: Overall survival (OS), disease-free survival (DFS), and local disease-free survival (LDFS). **Results:** We included 530 patients with a median follow-up of 79 months. From these, 24.6% underwent BCS and 75.4% MS. BCS has a higher pathological complete response rate than MS, 22.3% vs. 10%, p<0.001, respectively. About distant recurrence rates, BCS was 15.4% and MS 36.8% with OR 0.298; 95%CI 0.177–0.504. The local recurrence rates were 9.2% and 9.5% with OR 0.693; 95%CI 0.347–1.383 for BCS and MS, respectively. The 6-year OS rates for BCS and MS were 81.5% and 62%, respectively (p=0.000). In OS multivariate analysis, MS had a worse predictive value (OR 1.678; 95%CI 1.069–2.635; p=0.024) when compared with BCS. **Conclusion:** We concluded that BCS presents a better OS than mastectomy on LABC after NAT, improving OS by 32%.

Keywords: breast neoplasms; neoadjuvant therapy; local disease; mastectomy; survival rate.

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High-grade breast sarcoma in a young patient: Case report

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Introduction: Primary breast sarcoma is a rare type of cancer, accounting for less than 1% of breast cancers. They originate from mesenchymal tissue, and the mean age of patients varies between 51 and 75 years, with most being poorly differentiated. However, it can present as an invasive disease with high metastatic potential and resistance to conventional treatments. **Objective**: The objective of this was to report a case of breast sarcoma in a young patient. **Methodology:** This is a case report about a patient followed throughout her treatment from diagnosis, with detailed anamnesis and physical examination being performed, as well as complementary tests for diagnosis confirmation and appropriate treatment. **Case report:** Female, 25 years old, presented in December 2016 with an 18×15 cm mass in the right breast. She underwent ipsilateral mastectomy, lymphadenectomy, and thoracectomy. Histopathology revealed high-grade sarcoma, staged pT3N0. Chemotherapy with ifosfamide and doxorubicin, 4 cycles, and radiotherapy, 30 fractions, were proposed, ending in August 2017. In November 2019, she presented with pulmonary progressive disease (PD) and was treated with docetaxel and gemcitabine, 6 cycles, with a partial response, until it was suspended due to toxicity. Started maintenance therapy with gemcitabine, 3 cycles, and presented with new pulmonary PD in November 2020. Second-line therapy with 2 cycles of epirubicin was initiated. After the third pulmonary PD in January 2021, she underwent oral cyclophosphamide for 3 cycles. In June 2021, after a new PD in the lungs, fourth-line palliative therapy with pazopanib was proposed and started in August 2021, maintaining treatment until death in September 2021. **Conclusion:** Surgery is the preferred modality for curative treatment of sarcoma, and adjuvant radiotherapy is typically added to surgery as standard treatment for high-grade lesions. Adjuvant chemotherapy is considered a treatment option, especially for large tumors or those with lymph node involvement. Palliative chemotherapy should follow protocols used in soft tissue sarcoma and can help reduce tumor size, relieve symptoms, and improve life quality.

Keywords: breast cancer; sarcomas.

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Chemotherapy treatment changes muscle activation, but not the perception of effort on women with breast cancer

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Objective: The objective of this study was to analyze the effects of chemotherapy cycles on muscle activation (MA) and rated perceived exertion (RPE) in women with breast cancer. **Methodology:** A total of 21 women were divided into a treatment group (TG) (47.2±11.3 years old) and a control group (CG) of women without cancer (53.7±6.3 years old). The women in the TG had been diagnosed with breast cancer and were undergoing chemotherapy (anthracyclines®). MA analyses were performed and RPE between the second and third cycles of chemotherapy (baseline) and post-treatment (fourth cycle). The miotec® 200 model electromyograph was used to evaluate the MA, and the root-mean-square values of the rectus femoris and vastus medialis muscles were analyzed during the sit-to-stand test, as well as the RPE at the end of the test (Borg scale). Date is presented as mean and standard deviation. The two-way ANOVA test was used to compare the means between the moments and groups using the post-hoc Bonferroni. The significance level was defined at $p<0.05$. **Results:** The TG and CG differed at baseline in the MA of the vastus medialis (188.2±125.3 and 313.6±142.7, respectively; p=0.02) and rectus femoris (138.3±63.1 and 298.5±176.9, respectively; p=0.01). Just like in the post-treatment MA of the vastus medialis (172.7±121.2 and 352.3±198.3, respectively; p=0.01) and rectus femoris (150.5±66.8 and 406.6±282.1, respectively; p=0.00). However, no significant changes were found in the RPE between TG and CG in the baseline (10±2.7 and 11±2.8, respectively; p=0.33) and post-treatment (11.8±3.3 and 11.7±3.1, respectively; p=0.98). **Conclusion:** Chemotherapy seems to significantly change MA, but not RPE in women with breast cancer when compared with healthy women.

Keywords: breast cancer.

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Case report: Cohort study on male breast cancer patients in a tertiary center of Santiago, Chile

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Objective: Breast cancer is rare in men, accounting for less than 1% of all breast cancer diagnoses. Compared with females, it usually occurs at an older age, in a more advanced stage, and with positive estrogen receptors. The objective of this paper was to report five cases of breast cancer in men diagnosed at the San Borja Arriarán Clinical Hospital in Santiago de Chile between 2017 and 2022. The epidemiological, clinical, therapeutic, and evolutionary profiles were analyzed. The median age was 70 years, and the evolution time to diagnosis was 8 months. In four cases, the reason for consultation was self-palpation of a breast tumor and in one case due to axillary adenopathy. Four cases presented as cT1-T2 N0 and one case presented as T1N3M1 (cutaneous) (mean size 28 mm). The histology was infiltrating ductal carcinoma (three cases), one case of papillary cancer, and one of adenocarcinoma. The prognostic factors were positive estrogen and progesterone receptors in four cases (infiltrating and papillary ductal carcinoma) and triple-negative in one case (adenocarcinoma, metastatic debut). Treatment was surgery in four cases (total mastectomy with sentinel lymph node biopsy) and adjuvant radiotherapy and hormone therapy. The patient with metastatic debut was treated with palliative radiotherapy and chemotherapy. Follow-up of the five cases has been maintained. There are no deaths to date, but there was one case of visceral progression during hormone therapy.

Keywords: male breast cancer.

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Clinic and pathologic characteristics of breast cancer in young women treated at the Brazilian health system in Caxias do Sul

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Objective: The objective of this study was to evaluate the clinical and pathological characteristics, performed treatments, and clinical outcomes in patients diagnosed with BC treated at "Sistema Único de Saúde" (Brazilian Health System) in a city in the south of Brazil. **Methodology:** Observational, retrospective, descriptive, and cross-sectional epidemiological study through review of medical records of patients aged £40 years with BC treated at the Mastology Department of two public hospitals in Caxias do Sul city. **Results:** From a pool of 136 patients analyzed, most diagnoses (86.8%) were performed by self-examination, and the median time between the onset of symptoms and the search for specialized care was 2.1 months. Most tumors (52.9%) were diagnosed in advanced stages (stages IIB, III, and IV), and the most common subtype was luminal B (26.3%), followed by triple-negative (23%). Patients with triple-negative BC had a 3.8 times greater risk of disease progression when compared with luminal A subtype (p=0.042) (HR 3.8 (1.1–3.4)). Regarding surgical treatment, 55.2% underwent a mastectomy, and among these patients, 97% received breast reconstruction. During this period, 11 (8%) patients had locoregional recurrence, 38 (28%) patients had disease progression, and 19 (14%) patients died. The estimated 5-year disease-free survival was 64.2%, and the estimated 5-year overall survival was 83%. Patients younger than 30 years had a 2.5 times greater risk of death from BC (p=0.048) (HR 2.5 (1.01–6.16)). **Conclusion:** It is essential to know the social, clinical, and pathological profiles of young patients with BC to optimize diagnoses and treatments in young patients by health care teams.

Keywords: breast cancer; epidemiology.

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Non-immune hemolytic anemia in a patient with advanced breast cancer on capecitabine: A rare adverse event

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Background: Stage IV triple-negative breast cancer has a high mortality rate, and the treatment strategy will be based on the presence of biomarkers, disease burden, need for a response rate, and treatment tolerability. Among the various management modalities and effective treatments, capecitabine is a frequently used option due to its known benefits and relatively good tolerance. However, there are several commonly known adverse effects when using capecitabine, including non-immune hemolytic anemia, a very rare and unexpected side effect. Capecitabine is a form of fluoropyrimidine that is hypothesized to affect the structure of the red blood cell membrane, resulting in the destruction of these cells. **Case report:** A 71-year-old woman with stage IV triple-negative breast cancer with bone and skin metastases, negative PDL1, and germline mutations in BRCA1/2, with progression disease at first-line chemotherapy. Capecitabine was started at a dose of 2,000 mg/m^2/day, and after two cycles, she developed cytopenia, in addition to increased bilirubin and LDH, leading to the suspicion of hemolysis. She was evaluated by the hematological medical team with complementary tests such as reticulocytes, haptoglobin, and coombs D, the latter negative. Medullary infiltration was ruled out. Capecitabine has been suspended for 15 days, with normalization of tests. When it was reintroduced, there was a new alteration in laboratory tests. In the end, it was decided to permanently discontinue the drug, despite the clinical and radiological response. **Final Comments:** We present a very complex and challenging clinical case of a patient with metastatic breast cancer undergoing palliative treatment. Although the patient's disease was controlled with the use of capecitabine, cytopenia developed with suspected medication-induced non-immune hemolytic anemia. This shows the usual complexity of treating patients with drugs that have both acute and chronic side effects.

Keywords: adverse event; capecitabine; hemolytic anemia.

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The impact of the pandemic on breast cancer screening in Brazil

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Objective: The objective of this study was to analyze the impacts of the COVID-19 pandemic on the screening of breast cancer cases in Brazil. **Methodology:** This is an epidemiological, descriptive, quantitative, and comparative study. The Department of Informatics of the Unified Health System (DATASUS) was used. Data from the Cancer Information System — SISCAN (cervix and breast) were selected, in which the selected option was "mammography — by patients." The geographic coverage selected was "Brazil by region, state, and municipality." The periods analyzed were from 2018 to 2022. Due to the onset of the COVID-19 pandemic in 2020 in Brazil, the years 2018 and 2019 were analyzed as pre-pandemic, 2020 and 2021 as pandemic intervals, and 2022 as post-pandemic in order to compare the respective periods. **Results:** In 2018, 2,751,104 screening mammography exams were performed, of which 24,374 were BI-RADS 4, 5, or 6. In 2019, of the 3,303,248 exams, 29,645 were of the same classification; in 2020 (1,825,626), 21,464; in 2021 (2,623,895), 28,733; and in 2022 (3,222,436), 35,149. It is noted that there was a decrease in the number of mammograms during the pandemic period, but with an increase in the number of BI-RADS of suspicious lesions, indicating prioritization of patients with risk factors. In the year 2022, there were a greater number of exams and suspicious injury reports compared with the pre-pandemic and pandemic periods. **Conclusion:** There was a reduction in the number of mammography exams during the pandemic, contributing to time-consuming diagnoses and an increase in cases of advanced tumors in the immediate post-pandemic period. Thus, the impact caused by the COVID-19 pandemic on public health in Brazil is notorious.

Keywords: cancer; epidemiology; pandemic; COVID-19; mammography.

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Breast neoplasm with distinct histological subtypes: A case report

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Introduction: Breast cancer is a heterogeneous disease, divided into many subtypes, the most common being invasive ductal. Breast tumors can be derived from epithelial tissue or mesenchymal cells. Most malignant breast tumors are made up of a single type of tumor. Cases where there are two or more types of malignant tumors occurring at the same time are rare. We report a case with different types of malignancies, i.e., non-special invasive ductal carcinoma, metaplastic carcinoma, and squamous cell carcinoma occurred together. **Case report:** A woman, 56 years old, with no family history of gynecological neoplasia, sought care referring to a painful and erythematous nodule in her left breast for about 25 days. On physical examination, a 15×11 cm, slightly mobile nodule with irregular borders was noticed in the left breast and palpable axillary lymph nodes. The mammogram showed an isodense nodule with internal calcifications, measuring 10.2×9.4×7.2 cm, in the superolateral quadrant (QSL) of the left breast (ME) — BI-RADS V. The central biopsy showed non-special invasive breast carcinoma (NOS), triple-negative, and KI67 30%. She underwent neoadjuvant chemotherapy, and 5 months after the start, she showed evidence of tumor progression. The tumor was ulcerated and occupying the entire QSL of ME and on palpation of the armpit, multiple hardened lymph nodes on the left. Left radical mastectomy with axillary lymphadenectomy was performed. The anatomopathological examination of the specific specimen revealed different tumor types: ulcerated and moderately differentiated squamous cell carcinoma, invasive metaplastic breast carcinoma, with a negative immunohistochemical profile for RP, ER, and HER2, positive cytokeratin 7, and 70% Ki67. Two months after the mastectomy, she had tumor recurrence and underwent a new surgical approach. Plastron histopathology showed squamous cell carcinoma infiltrating skin, negative estrogen and progesterone receptors, and positive p63. She underwent radiotherapy and is currently being followed up, with no signs of recurrence.

Keywords: breast malignant tumor; squamous cell carcinoma.

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A remote, fully oriented personalized program of physical exercise for women in follow-up after breast cancer treatment improves body composition and physical fitness

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Objective: This study aimed to evaluate the efficacy of an individualized remote exercise program on the improvement of body composition and physical fitness of a heterogeneous group of patients who completed breast cancer treatment. **Methodology:** This prospective study included 107 women aged 18–60 years, shortly after curative treatment for localized breast cancer at the Erasto Gaertner Cancer Hospital (HEG) in Curitiba, PR, Brazil. Body composition, maximal oxygen uptake, and muscle resistance were evaluated after 9 months of intervention while considering adherence to the program, level of physical activity, presence of binge eating disorder, tumor classification, and treatment type. **Results:** Seventy-eight women (72.8%) adhered to the training program. Adherent participants showed significant changes in body mass (-4.3±3.6 kg; p=0.0001), body mass index (-1.6±1.5 kg/m^2; p=0.0001), body fat (-3.4±3.1%; p=0.0001), VO_2 max (7.5±2.0 mL/(kg×min); p=0.0001), and abdominal resistance (11.2±2.8 reps; p=0.0001). In contrast, these variables did not change significantly in the non-adherent group. Among the adherent participants, those sub-classified in the severe binge group showed a more noticeable reduction in body mass, body mass index, and body fat (p=0.05) than those in the non-binge group. The manuscript (not published) was recently accepted for publication in the journal Sports Medicine and Health Science. **Conclusion:** Individualized remotely-guided physical exercise programs can improve the body composition and physical fitness of women undergoing post-breast cancer surveillance, regardless of pathological history or treatment.

Keywords: breast neoplasm; exercise training; physical therapy modalities; body weight changes; physical functional performance.

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Desmoid breast fibromatosis occurring after reconstructive surgery simulating carcinoma: A rare case report

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Introduction: Desmoid fibromatosis is a rare tumor, representing less than 0.2% of all breast tumors, characterized by clonal fibroblastic deep soft tissue, locally aggressive growth and high incidence of recurrence (between 24% and 77% in 10 years). It is associated with trauma or surgical procedures of the breast and presents similary to breast carcinoma. Diagnostic criteria are histological, and breast imaging techniques are non-specific. The treatment is surgical with complete excision and safety margin, varying according to the studies, from 0.5 to 3 cm to avoid recurrences, which, when they occur and reach vital organs, cause 8% of mortality. **Case Report:** A female, 56 years old, with infiltrating ductal carcinoma in the upper lateral quadrant of the left breast, measuring 2.0 cm, high nuclear grade, triple-negative, and acquired at the age of 53 years. She underwent neoadjuvant chemotherapy, quadrantectomy with negative sentinel lymph node biopsy, and radiotherapy. Two years later, she returned with a recurrence in the lower lateral quadrant of the left breast, measuring 1.0 cm. Despite the negative genetic study for pathogenic variants, she opted for bilateral mastectomy and immediate reconstruction (prostheses and dermal matrix), the one on the right being prophylactic. There was infection on the right, rejection, and loss of the prosthesis. After 1 year, she presented with a bearable nodule, immobile and adhered to the chest wall, measuring 2.2 cm on the lateral border of the pectoral muscle, on the right, confirmed by chest tomography and magnetic resonance imaging. She was submitted to mammotomy whose biopsy showed low-grade spindle cell in the inferolateral quadrant. A segmental resection was performed, whose anatomopathological and immunohistochemical studies confirmed the diagnosis of fibromatosis in the right breast, positive reaction to the beta-catenin antibody, measuring 2.5×2.5 cm and free elastic margins. She is being followed up at the outpatient clinic, with no signs of recurrence.

Keywords: breast neoplasm; breast cancer.

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The impact of the COVID-19 pandemic in the context of breast cancer: A systematic review

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Objective: This review intends to clarify the relationship between the pandemic of COVID-19 and the increase in cases and in the worsening of the prognosis of breast cancer, in Brazil and in the world. **Methodology:** A systematic literature review was carried out from the PubMed database, with the descriptors: "pandemic" and "breast cancer," with the Boolean operator: "AND," and the filters: "full text," with publication date 2021 and 2022, in women only, in the English language. Ten scientific articles were identified. **Results:** The COVID-19 pandemic increased existing barriers to access to screening, treatment, and emotional support services for breast cancer. Changes in health recommendations and less urgent appointments have led to a decrease in cancer screening rates, which resulted in late diagnoses and worse outcomes for patients. It is valuable to emphasize the importance of improving access to breast cancer screening services during health crises such as the pandemic, implementing safe and effective strategies to mitigate its effects. In addition, the fear and stress of contracting the virus while attending health units, on top of the delays in diagnosis and treatment faced during the crisis, negatively impacted the mental health of patients. The insecurity when dealing with a malignant neoplasm was amplified by the pandemic and resulted in an increase of this biological factor that greatly interferes with cancer prognosis. **Conclusion:** The COVID-19 pandemic imposed a drop in screening, diagnosis, and follow-up of breast cancer. The health system suffered the impact of the pandemic, leaving care for other diseases to be neglected, and patients stopped seeking health services for other morbidities, such as breast cancer. Health professionals must be aware of and must work to minimize the harm of negligence with this cancer during times of crisis, as occurred with COVID-19.

Keywords: breast cancer; pandemic; COVID-19.

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Diffuse B-cell lymphoma in the male breast: A rare case report

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Introduction: Lymphomas are a heterogeneous group of cancers derived from the immune system, characterized by increased proliferation of lymph nodes or secondary lymphatic tissue. Breast involvement by lymphoma is uncommon, representing only 0.1% of malignant breast lesions. Clinical similarities with breast cancer make preoperative diagnosis of breast lymphoma difficult. Histologically, most primary breast lymphomas (PML) are of the B-cell type. The treatment of PML is based on the recommendations for the treatment of lymphomas of other locations according to the histological type, staging, and characteristics of the patient. **Case Report:** A male, 83 years old, with no family history of breast cancer, with Alzheimer's disease. He presented at the mastology outpatient clinic referring to a tumor in the right breast, with progressive growth. He reported having performed several treatments, including antibiotics, without improvement, in a breast lesion. He denied fever, night sweats, and weight loss. On physical examination, he had multiple nodular, hardened, and erythematous lesions in almost the entire right breast, some with an ulceration area, located in the medial quadrants, measuring about 15×11 cm. Palpable axillary lymph nodes measuring 1.5 cm. A mammography showed a regular, isodense nodule measuring 5.0 cm in the central region of the right breast — BI-RADS 4. He underwent a core biopsy, with histopathology compatible with diffuse large B-cell lymphoma in the right breast and immunohistochemistry with CD20 expression, MUM1, MYC, and 90% audience rating (Ki67). PET-CT showed a large cutaneous and subcutaneous mass in the right breast measuring 15.8×4.8×9.2 cm, bilateral axillary lymphadenopathy and sparse areas of skin thickening. He was referred to the oncology service, which started chemotherapy using the R-MINI-CHOP protocol (Rituximab, Cyclophosphamide, Doxorubicin, Vincristine, and Prednisone). Currently, it has shown a good response to chemotherapy treatment, with remission of the lesions.

Keywords: breast neoplasm; male breast cancer; lymphoma.

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From diagnosis to beginning breast cancer treatment: A study about time in a reference private hospital in São Luís, MA, Brazil

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Objective: The objective of this study was to determine the time interval from diagnosis to initiation breast cancer treatment and to investigate factors associated with its delay. **Methodology:** This is an observational, descriptive, and retrospective study with analysis of medical records between January 2015 and December 2019, carried out in a private oncology referral hospital in São Luís, MA. Patients diagnosed with breast cancer (International Classification of Diseases-10 C50) were included. A total of 21 variables of epidemiological, clinical, and tumor characteristics were analyzed. The absolute and relative frequencies of categorical and numerical variables were calculated. The chi-square test was performed to compare categorical variables, and the Student's t-test was used to compare numerical variables. The significance level was $p<0.05$. **Results:** There were 112 cases analyzed, 100% female, and 82.1% started treatment within 60 days of diagnosis. The mean time from diagnosis to treatment was 42.5 days (SD±24.3), and the median was 39 days. The year 2017 presented the majority of diagnosed cases (24.1%). The mean age at diagnosis was 51.9 years (SD±12.7), and most were 60 years or older (29.7%). In 82.4% of the cases, the tumor was diagnosed at an early stage, and most were luminal A and B tumors (52.8%). In 64.4% of the cases, the treatment was started with surgery. Factors related to the delay in starting treatment were obesity and starting with surgery ($p=0.007$). **Conclusion:** Our results are similar to those of developed countries. In the population studied, the factors related to delay were obesity and starting treatment with surgery. Possible factors that contribute to these results would be the bureaucracy involved in the authorization of private health plans, the difficulty of navigating patients through the hospital system, and the comorbidities associated with obesity.

Keywords: breast cancer; time to treatment; private hospital.

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Two pathogenic variants in a patient with cervical and breast cancer: Case report

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Introduction: The presence of two pathogenic germline variants in hereditary cancer is an uncommon event. We report a case of a Brazilian patient from Teresina, Piauí, who developed breast and cervical carcinoma with pathogenic variants in BRCA2 and MUTYH genes. **Case Report:** A 25-year-old female patient in 2012 underwent a radical hysterectomy with pelvic lymphadenectomy without ovarian preservation for treatment of histologic grade 2 (G2) squamous cell carcinoma (SCC) of the cervix, FIGO stage IB2. Histopathology of the surgical specimen revealed SCC, G2, stromal invasion 16 mm, 4.5 cm in diameter, compromised parametrium, 6 lymph nodes without metastasis, and normal ovaries. She received pelvic radiotherapy and brachytherapy associated with platinum-based chemotherapy. In 2017, she was diagnosed with histologic grade 1 invasive breast carcinoma of no special type in the right breast. Immunohistochemistry revealed that it was a luminal B tumor (estrogen receptor (ER)+ 90%, progesterone receptor (PR) + 80%, human epidermal growth factor (HER2) 1+, Ki-67 40%), stage IA (T1N0M0)). Neoadjuvant chemotherapy with doxorubicin and cyclophosphamide (AC, 4 cycles) followed by paclitaxel (12 cycles) was performed. The patient underwent segmental mastectomy, and sentinel lymph node research and histopathology revealed complete pathological response and negative sentinel lymph node residual cancer burden 0. She had a history of three pregnancies and three deliveries, with no case of neoplasia in the family. In 2023, multigene test for hereditary predisposition to cancer was performed, in which two pathogenic variants were detected being one in BRCA2 gene (c.8725A>T) and the other in MUTYH (c.1187G>A). Currently, there is no evidence of active disease and on schedule for colonoscopy, endoscopy, and bilateral risk-reducing mastectomy. **Conclusion:** In young patients with multiple cancers, a search for pathogenic variants related to hereditary cancer predisposition syndromes should be offered, as in the present case.

Keywords: BRCA2 gene; uterine cervical neoplasms; breast cancer.

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Comparison of functional performance and kinesiophobia between mastectomy and quadrantectomy in breast cancer survivors

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Objective: This study aimed to compare the functional performance and kinesiophobia, of breast cancer survivors who underwent a mastectomy and quadrantectomy **Methodology:** A total of 27 women who participated in the study were separated into mastectomy group (MG) (n=13; age: 51.00±7.83 years) and quadrantectomy group (QG) (n=14; age: 53.50±9.33 years). The functional performance was evaluated by the DASH, and the kinesiophobia was evaluated by the Tampa Scale. The inclusion criteria were being in menopause, not participating in any regular program of resistance exercises in the last 6 months, having undergone mastectomy or breast quadrantectomy, and not having metastasis Data normality was assessed by the Kolmogorov-Smirnov test. The unpaired t-test was used to compare the kinesiophobia, and the Mann-Whitney test was used to compare the groups for the variables that did not present normal distribution in the disabilities arm of shoulder and hand; the significance level was defined a priori at $p<0.05$. **Results:** There was no significant difference between groups on functional performance (MG: 20.8±1.9; QG: 23.1±2.1; p=0.63) and kinesiophobia (MG: 41.3±9.5; QG: 40.2±9.9; p=0.75). **Conclusion:** The current results suggest that surgery types a similar impact on the functional performance and kinesiophobia of women who are survivors of breast cancer.

Keywords: cancer; fear.

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Chronic non-granulomatous mastitis with positive culture for *Mycobacterium tuberculosis*

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Objective: The objective of this study was to describe a case of chronic mastitis with multiple recurrences and positive culture for *Mycobacterium tuberculosis*. Methods: The information for this case report was obtained via a consent form, and the study was approved by the Research Ethics Committee of the Universidade Federal de Goiás HC/UFG – GO, with CAAE number: 11983719.0.0000.5078. **Results:** Patient N.F.R., female, 59 years old, with systemic arterial hypertension, dyslipidemia, and smoker. On July 2020, a hypoechoic, heterogeneous, lobulated mammary nodule was identified on the left, measuring 2×1 cm in the ultrasound examination. A core biopsy was performed, whose histopathology (HP) showed benign breast tissue, ductal ectasia, fibroadenosis, and lymphomononuclear inflammatory infiltrate with neutrophilic exudation. On April 2021, the condition evolved with hyperemia, edema, mastalgia, and the presence of an abscess measuring 2×2 cm. She used several antibiotics (clindamycin, cephalexin, amoxicillin-clavulanate, ciprofloxacin, and trimethoprim-sulfamethoxazole), with partial improvement. New exacerbations of the condition and recurrent fistulization were presented. The secretion of the drained abscess on January 2022 showed negative bacilloscopy and growth of multisensitive Proteus mirabilis, treated with amoxicillin-clavulanate. After 2 months, the infection control service received a culture for mycobacteria positive for the *M. tuberculosis* complex in breast secretions. The patient was summoned for an infectious disease consultation, and treatment with rifampicin, isoniazid, pyrazinamide, and ethambutol (RIPE) was initiated. A new drainage of the abscess was performed, and after 20 days of RIPE, the patient's pain improved and the fistula healed, maintaining an area of hyperemia and nodulation. She maintains treatment with the infectology and mastology team. **Conclusion:** The diagnosis of breast tuberculosis is challenging, and it depends on high suspicion, accurate collection of biological materials and sending them for microbiological study in a timely manner. The culture is still the gold standard, but it has low sensitivity in paucibacillary forms. HP, on the contrary, may not present tuberculoid granuloma. In this sense, the rapid molecular test for mycobacteria could increase sensitivity and early identification in tissue.

Keywords: mastitis; extrapulmonary tuberculosis; *Mycobacterium tuberculosis*; breast diseases.

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Triple-negative breast cancer: A history of evolution in treatment and prognosis and women's quality of life

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Objective: This study aimed to show the progress in the treatment of triple-negative breast cancer and the impact on the prognosis and quality of life of women. **Methodology:** A systematic literature review was carried out from the PubMed database, with the descriptors "Breast cancer triple-negative," "Treatment," and "Quality of life" with the Boolean operator "AND," and the filters: "full text," with a publication date of 2012, 2013, 2022, and 2023, only in women, in the English language. A total of 29 articles were found. **Results:** In 2012–2013, the treatment for triple-negative cancer was based on the combination of monoclonal antibodies (bevacizumab) with chemotherapy (eribulin), both for tumors in early stages and for metastases, or a radical mastectomy. Both treatments were extremely aggressive for women, with direct consequences on their physical and mental health, as these treatments meant the loss of an organ that symbolizes femininity and the patient's self-perception as a woman, in addition to excessive hair loss, dryness mucous membranes and skin, changes in appetite, and severe asthenia. In the years 2022–2023, in addition to the therapeutic strategies used 10 years earlier, there was the discovery and advancement in immunotherapy (pembrolizumab), a treatment aimed at activating the immune system against installed cancer. However, the current treatment is about 20 times more expensive than the old one. **Conclusion:** It was evident that there were small changes in the treatment of triple-negative breast cancer, as there was only the discovery and implementation of immunotherapy, but this small advance allowed a great improvement in the quality of life of patients during treatment. However, this advance is, currently, for a small group of patients, as the world reality is that most patients are unable to pay for immunotherapy and continue with the outdated and archaic therapeutic plan of 10 years ago, continuing with the same complications and heavy consequences on their physical and menthal health.

Keywords: breast cancer; treatment; quality of life.

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Invasive lobular breast carcinoma presenting hepatic carcinomatosis: A case report

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Metastatic carcinomatosis to the liver is a pattern of malignant infiltration that tends to provoke liver fibrosis. It is a rare complication of multiple types of solid tumors and often seen in the absence of a discrete tumor mass in the liver. We report the case of a patient who presented the rare diagnosis of metastatic carcinomatosis for liver from breast cancer. A woman at the age of 42 years presented invasive lobular carcinoma, pT3 pN0 M0, positive immunohistochemistry 70% for estrogen receptor and 30% progesterone, HER2 and E-cadherin negative, and Ki67 of 5%. The patient during the fourth year of adjuvant hormone therapy with tamoxifen presented an increase in serum tumor marker (CA 125: 17–130), with no evidence of systemic disease on imaging tests. Due to the slightly cirrhotic contour of the liver on a computed tomography, a liver biopsy was performed for investigation. The early diagnosis of occult and diffuse dissemination to the liver was made by means of a percutaneous liver biopsy showing invasive breast cancer cells, with immunohistochemistry compatible with metastasis of lobular breast carcinoma, positive for hormone receptors, and doubtful for HER-2, with KI67 of 20%. Metastatic carcinomatosis, unlike lesions of discrete liver masses, may not be detectable with imaging tests, and often biopsy or autopsy is needed to confirm the diagnosis. This case highlights a rare and difficult to early diagnosis pattern of hepatic carcinomatosis due to lobular breast carcinoma.

Keywords: breast cancer; lobular carcinoma.

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Oncoplastic surgery for Paget's disease of the breast

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Objective: Paget's disease of the breast (PDB) is a rare nipple entity associated with multifocality. Due to its location, it is necessary to resect the nipple-areolar complex. For surgery, central quadrantectomy, and for mastectomy was the treatment in the past. The feasibility of performing oncoplastic breast surgery (OBS) for PDB is unknown. The objective of this study was to evaluate the feasibility of oncoplastic surgery for Patet's disease of the breast. **Methodology:** This retrospective study was approved by the institutional Research Ethics Committee under numbers 657293 and CAAE 31046314.5.0000.5437. Patients with PDB treated at a tertiary cancer hospital between 2000 and 2021 were evaluated. We evaluated the factors related to the performance of OBS in PDB. In addition, the impact of OBS on local recurrence and survival was analyzed. Comparisons were made between groups using the chi-square test, Mann-Whitney U test, and Kaplan-Meier method. To assess the impact factor of the variables on the performance of OBS, logistic regression was performed. **Results:** A total of 85 patients were evaluated. OBS was performed in 69.4% (n=59), and of these, 16 (27.2%) were symmetrized with a contralateral surgery. Mastectomy without reconstruction was performed in 28.3% of the patients. The main procedure performed was mastectomy with reconstruction (44.7%), and the preferential technique for immediate reconstruction was skin sparing mastectomy with prosthesis, and for late reconstruction, latissimus dorsi. BCS was performed in 27.0%, mainly with plug-flap technique (OBS). Age was associated with the use of OBS, wherein patients aged 40–49 years were associated with a higher rate of OBS (p=0.002; odds ratio 3.22). OBS did not influence local recurrence (p=1.000), overall survival (p=0.185), or cancer-specific survival (p=0.418). **Conclusion:** OBS improves the quality of surgical treatment in PDB without influencing local recurrence or survival.

Keywords: breast neoplasms; breast reconstruction; plastic surgery.

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Multidisciplinary treatment after doxorubicin extravasation: Improvement of range of motion in the elbow joint

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Introduction: Chemotherapy extravasation is an infrequent complication with challenging consequences for the patient and the care team. Doxorubicin is a chemotherapeutic used in the treatment of breast cancer, being classified as a DNA-binding vesicant agent, and its spillage into the interstitial space can lead to severe tissue damage. The acute condition includes pain, hyperemia, edema, ulceration, and necrosis in the region, evolving with fibrosis, restriction of range of motion (ROM), and other chronic sequelae. **Objective:** The objective of this study was to describe the multidisciplinary treatment of a case of Doxorubicin extravasation with ROM restriction in the elbow joint. **Report:** A female, 29 years old, with invasive ductal carcinoma, cT2N1M0, with luminal phenotype B. Neoadjuvant chemotherapy was initiated with AC scheme (Doxorubicin + Cyclophosphamide). There was a suspicion of extravasation in the peripheral access (cubital fossa) during the application of Doxorubicin in the first cycle. Topical treatment with corticosteroids was started, but the patient developed burning sensation, edema, and local hyperemia. In the following days, oral corticosteroids, antibiotics, and dimethylsulfoxide (DMSO) were added, followed by physiotherapy. Despite partial improvement, the patient evolved with skin hyperpigmentation, tissue fibrosis, restriction of elbow extension movement, and arm retraction at 90º, making it difficult to perform domestic and daily activities. After oncological surgical treatment, zetaplasty was performed on the affected arm, with an increase in ROM of about 20º. Subsequently, with the intensification of physiotherapy and pilates sessions, the patient achieved a global improvement of 30º and returned to most daily activities. Thus, we describe a case of Doxorubicin extravasation with chronic sequelae, which was managed by a multidisciplinary team. In this context, physiotherapy played a key role in improving the patient's ROM and returning to daily activities.

Keywords: breast cancer; chemotherapy.

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Overall survival in patients with second primary breast cancer

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Objective: The objective of this study was to analyze the overall survival of patients with second primary synchronous and metachronous breast cancer. **Methodology:** A retrospective cohort study on women with second primary breast cancer, diagnosed between 2000 and 2015, was conducted. The cases were drawn from the Cancer Hospital registry and classified according to the hospital registry rules for second primary cancers. The second primary breast tumor was defined as synchronous or metachronous according to the diagnosis of the second cancer: ≤6 months of the first tumor and >6 months after the first tumor, respectively (Newman et al. 2001). Survival curves were estimated using the Kaplan-Meier method. **Results:** A total of 11,922 women with breast cancer were identified between 2000 and 2015. Of these cases, 3.24% (375) had second primary breast cancer, comprising 60.8% (228) synchronous and 39.2% (147) metachronous tumors. Regarding age, patients were predominantly in the ≥60 years age accounting for 39.9% (91) of synchronous and 48.3% (71) of metachronous cases, with a mean patient age of 55 years for synchronous and 59 years for metachronous tumors. Overall, 5-year survival in women with synchronous breast cancer was 86.5% (95%CI 79.69–91.21) and with metachronous cancer was 82.1% (95%CI 73.71–88.10), while 10-year survival was 69% for both synchronous and metachronous. **Conclusion:** There was no difference in overall survival of patients with second primary synchronous and metachronous at 5 and 10 years after treatment. However, in this cohort, we were not able to investigate the genetics profile to identify the presence of associated genetic syndromes, a factor that can modify our findings.

Keywords: survival; breast cancer.

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Follow-up of a Li-Fraumeni syndrome case

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Introduction: Li-Fraumeni syndrome (LFS) is responsible for about 1% of hereditary breast cancers (BC). We present a case report of a young woman with synchronous osteosarcoma and BC. **Case Report:** NOB, 23 years old. Mother died with BC at 36 years old and sister died due to neuroblastoma at 2 years old. She was referred in 2021 for a nodule in her left breast and the ultrasound results showed an irregular nodule of 1.5×1.2×1.3 cm BI-RADS®5 and anatomopathological invasive carcinoma of non-special histological type (NST), estrogen receptor 80%, progesterone receptor 100%, Her2 negative, and Ki67 60% cT1N0. It was associated with a lesion in the alveolar mucosa with bleeding and deformity of the oral cavity with anatomopathological high histological osteosarcoma-T1N0. Surgical treatment was performed: maxillectomy of meso and bilateral infrastructure+tracheostomy+reconstruction with microsurgical flap of the fibula and, then, left adenomastectomy+sentinel lymph node biopsy+prosthesis reconstruction. Surgical anatomopathological results in central/medullary high-grade conventional osteosarcoma chondroblasts 7.3×6.1×3.9 cm, free surgical margins and four cervical lymph nodes free of neoplastic involvement, and invasive breast carcinoma NST with medullary characteristics 1.8×1.3 cm, free margins, and absence of metastasis in two sentinel lymph nodes –pT1pN0. Genetic test resulted in pathogenic mutation TP53 gene, position chr17:7.674.257, consequence p.Tyr236HisENST00000269305. Adjuvant chemotherapy was docetaxel+cyclophosphamide. Two years after treatment, she is taking tamoxifen, scheduled for contralateral adenomastectomy, and maintains high-risk follow-up. There is no signal of any cancer disease. **Discussion:** LFS is an autosomal dominant inheritance of high penetrance. The diagnosis is based on the identification of a pathogenic variant in the TP53 gene. It is related to several tumors diagnosed at an early age. BC is the most common cancer and affects 27–31% of patients. Osteosarcoma corresponds to 3%–16% of cases, usually occurring before the age of 30 years. The prognosis of patients does not differ from those with sporadic cancer. They must be monitored by a multidisciplinary team, screening with annual whole body/breast MRI and mammography, and colonoscopy every 5 years. Genetic counseling is essential.

Keywords: Li-Fraumeni syndrome; osteosarcoma; breast neoplasms.

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The influence of neoadjuvant chemotherapy response in local recurrence of breast cancer patients undergoing nipple-sparing mastectomy

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Objective: Our study aimed to examine the influence of response to neoadjuvant chemotherapy (NACT) in local recurrence (LR) of o heterogeneous cohort of breast cancer patients who underwent nipple-sparing mastectomy (NSM) with immediate breast reconstruction. **Methodology:** We evaluated 101 breast cancer patients undergoing 194 NSM after NACT between January 2004 and December 2020. The data were retrospectively evaluated by the medical chart, and the patient's follow-up was updated during the appointments. **Results:** The patient's median age was 42.9 years. The majority of patients (90.2%) underwent bilateral procedures, and the reasons for the surgery in the contralateral breast were 18.8% diagnosis of high penetrance gene mutation, 4.9% breast cancer in both breasts, 2% atypia, and 74.3% asymmetry/patient option. Breast reconstruction was performed using silicon prosthetic implants for 98 (97%) patients and with a tissue expander for only 3 (3%) patients. Luminal tumors were more prevalent (43.5%), followed by triple-negative (32.8%), luminal/HER2 (17.8%), and HER2 (5.9%). A complete response to NACT was observed in 23.5% of the patients, and 76.5% presented a partial response. In the mean follow-up of 50 months, 6 (5.9%) patients were diagnosed with LR as the first event, and achieving a partial response to NACT was not correlated to local relapse (p=0.5). When analyzing luminal and triple-negative tumors separately, we observed RPC in 9% of luminal and 36.5% of TN tumors, and all LRs occurred in patients with incomplete response. In luminal tumors with incomplete response to NACT was observed 2.5% of LR versus 9.5% in TN demonstrating an increased LR in triple-negative tumors without RPC to NACT. However, the statistical analysis did not demonstrate significance because of the small sample size. **Conclusion:** A complete response to NACT is associated with a better prognosis; however, in our mixed cohort, it does not interfere with the chance of developing LR. Further studies with more patients analyzing separately the breast cancer molecular subtypes are needed to verify this preliminary result.

Keywords: breast neoplasms; neoadjuvant chemotherapy; recurrence; subcutaneous mastectomy; drug resistance.

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Olaparib in the treatment of leptomeningeal carcinomatosis

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Leptomeningeal carcinomatosis (LC) is a complication of breast cancer that carries a poor prognosis. The median overall survival was only 3.8 months. Due to the scarcity of data on therapeutic interventions, patterns of practice vary widely. Preclinical studies have shown that PARP inhibitors penetrate the central nervous system, suggesting a possible role in treatment. We report a case of a patient with BRCA2 and LC mutation who demonstrated an excellent clinical response to Olaparib. A woman had classic lobular carcinoma in the right breast at the age of 50 years. Immunohistochemistry was positive 100% for estrogen receptor and 70% for progesterone, HER2, and E-cadherin negative. Treatment was carried out initially with quadrantectomy and expanded to axillary dissection with 37/39 lymph nodes compromised, pT2 pN3 M0, adjuvant chemotherapy with 4 cycles ACdd and 12 paclitaxel, radiotherapy, and letrozole since March 2019. The genetic panel had a pathogenic mutation in BRCA2. At the age of 53 years, she presented with a headache of strong intensity, peripheral facial paralysis on the right, diplopia, syncope, asthenia, and loss of performance status (ECOG: 3, previous 0). There was negative systemic staging of the occasion and magnetic resonance of the skull with nonspecific white matter enhancement. There was lumbar puncture with positive cerebrospinal fluid for oncotic cytology. He underwent radiotherapy in the total skull with 30 Gy, followed by Olaparib. After 5 months, she presented complete remission of symptoms and negative oncotic cytology of cerebrospinal fluid. Our patient with leptomeningeal metastasis in the context of breast cancer with BRCA2 mutation maintained a complete clinic to Olaparib after 22 months of therapy, her response suggests the efficacy of Olaparib, and its survival far exceeds the reported medians for CL in breast cancer. In conclusion, the present process supports the potential role of PARP inhibitors in the treatment of LC and other CNS metastases of breast cancer in patients with hereditary BRCA mutations.

Keywords: breast cancer; BRCA2 genes; PARP inhibitor.

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Comparison of BI-RADS® classification of magnetic resonance screening with BI-RADS® for mammography and ultrasonography

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Objective: The objective of this study was to compare BI-RADS® magnetic resonance imaging (MRI) in relation to BI-RADS® mammography (MMG) and ultrasonography (USG) from previous exams, determining the level of agreement between the three methods. **Methodology:** This is a retrospective cross-sectional study of examinations of women with indications for MRI in an imaging clinic in the city of Goiânia, GO, from 2021 to 2022. The sample was divided according to the BI-RADS® classification into two groups, one with low suspicion for classifications 1, 2, and 3 and another with high suspicion for classifications 0, 4, 5, and 6. The distribution of the sample profile in patients with BI-RADS® MRI low suspicion and high suspicion was tested by applying Pearson's chi-square test, relative frequency, and absolute frequency. Data were analyzed using the Statistical Package for Social Science (SPSS 26.0) with a significance level of 5% ($p<0.05$). **Results:** A total of 294 MRI scans were evaluated, of which 136 (46.3%) had previous MMG and 158 (53.7%) had previous USG. Comparing the BI-RADS® MRI classification with the BI-RADS® of previous high-suspicion exams, it was observed that both were concordant ($p<0.01$), with 60% BI-RADS® MMG and 57.1% USG. Regarding the change in the BI-RADS classification, in 17.8% of the BI-RADS® of the MMG and USG exams as low suspicion after MRI, it changed to high suspicion; 18.7% of BI-RADS® from MMG and USG exams as high suspicion after MRI changed to low suspicion; 11.6% of BI-RADS® from MMG and USG exams as high suspicion after MRI had alteration, but remained in high suspicion; and 51.7% of BI-RADS® from MMG and USG exams as low suspicion after MRI had alteration, but remained in low suspicion. **Conclusion:** Comparison of BI-RADS® MRI with BI-RADS® from previous exams shows the agreement factor in the detection of high suspicion for breast analysis.

Keywords: breasts; mammography; magnetic resonance; ultrasonography.

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Report of a series of cases of breast cancer during pregnancy in a public hospital in Santiago de Chile

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Objective: The objective of this study was to report 14 cases of breast cancer during pregnancy and puerperium at the San Borja Arriarán Clinical Hospital in Chile between 2016 and 2022 and analyze the type of treatment, response to treatment, and possible complications of pregnancy associated with chemotherapy. **Methodology:** This is a retrospective descriptive analysis of a database of breast cancer diagnosed and treated during pregnancy and the puerperium. Prognostic factors, stage, type of treatment, clinical and pathological response, gestational age at delivery, and newborn weight, in addition to post-treatment follow-up were considered. **Results:** The average age was 33 years. In 10 patients, the diagnosis was during pregnancy and 4 during the puerperium. In all cases, the suspicion was clinical due to a palpable tumor. Percutaneous biopsy showed 100% infiltrating G2 and G3 ductal carcinoma. The most frequent immunohistochemical profile was luminal B, followed by triple-negative. Stage III was the most frequent at diagnosis. Notably, 12 patients received complete treatment and were followed up. One stage IV patient died during treatment. Five patients progressed with distant metastases. There was an extreme preterm labor due to preeclampsia. The average newborn weight was 2,968 g. **Conclusion:** This series is consistent with the majority of publications where diagnosis is evidenced in locally advanced stages, with unfavorable histology and prognostic factors. In our series, there was no repercussion of chemotherapy treatments in the fetoplacental unit.

Keywords: breast cancer.

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Hereditary cancer syndromes in patients with second primary breast cancer

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Objective: The objective of this study was to evaluate the presence of hereditary cancer syndromes (HCS) in patients with a diagnosis of two primary breast carcinomas and analyze the frequency of pathogenic variants in high- and moderate-penetrance genes. **Methodology:** This is a retrospective unicentric cohort study on patients with a diagnosis of two primary breast cancers, diagnosed between January 2000 to December 2020, at A.C. Camargo Cancer Center, Brazil. The association between categorical variables was analyzed by the chi-square test or Fisher's exact test. For survival curves, the Kaplan-Meier method and log-rank test were used to describe the survival curve differences. **Results:** Medical records of breast cancer patients were reviewed from 2000 to 2020, and a frequency of 600 patients with two primary breast tumors (metachronous or synchronous) was observed. In total, 190 (31.7%) patients performed genetic testing and 35 (5.8%) patients presented a pathogenic or likely-pathogenic germline variant in cancer predisposing genes. **Conclusion:** Our results revealed a low rate of genetic testing among patients with two primary breast cancers in a cancer center and a frequency of carrier patients lower than expected.

Keywords: breast cancer; hereditary cancer syndromes.

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Skin-sparing mini dorsi flap

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Objective: The fat-grafted latissimus dorsi muscle flap has become an excellent option for immediate or late post-mastectomy autologous breast reconstruction. The latissimus dorsi flap without skin island can be used in immediate reconstruction after skin- and nipple-sparing mastectomy, as there is no need to replace the skin on the breast. The work presented here describes a new approach of the Mini flap of the dorsal fat graft in the total breast reconstruction after skin- and nipple-sparing mastectomy in patients with small- and medium-sized breasts, eliminating its classic scar from the removal of the island of skin on the side of the thorax. **Methodology:** Initially, a skin- and nipple-sparing mastectomy is performed through an incision in the lateral portion of the inframammary fold. Then, through the same incision, the latissimus dorsi muscle is identified. The muscle is sectioned at its insertions and transposed to the mastectomy bed. The inferior, medial, and superior portions (tendon) of the muscle are preserved (mini flap). Liposuction is performed on the abdominal wall and/or thighs, and the fat graft is performed in several planes such as a skin flap from the mastectomy, intramuscular in the pectoralis major and in the latissimus dorsi flap. **Results:** This new method was performed in five cases. The average duration of the total procedure (mastectomy + axillary approach + reconstruction) was 296 min (270–330), the average breast weight was 350 g (205–458), and the average volume of fat grafted was 234 ml (190–270). We had two cases of seroma in the donor area. **Conclusion:** The lipo-filled skin-sparing mini dorsi flap allows small- and medium-sized breasts to be completely reconstructed with autologous tissue without scarring on the back, without the need to change position, and without the complete removal of the latissimus dorsi muscle.

Keywords: abdominal wall; back; beds; breast; cicatrix; lipectomy; mammaplasty; mastectomy; methods; muscles; nipples; patients; pectoralis muscles; seroma; skin; superficial back muscles; tendons; thigh; thorax; tissue donors; tissues; transplants; work.

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Epidemiological and histo-molecular profile of patients with breast cancer who underwent genetic testing at a tertiary clinic in northeastern Brazil

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Objective: The aim of this study was to describe the epidemiological and histo-molecular profile of patients with breast cancer (CAM) who underwent genetic testing at an oncology clinic in northeastern Brazil. **Methodology:** This is a retrospective cohort study on patients with CAM who underwent genetic testing from 1998 to 2022 at a tertiary clinic in northeastern Brazil and who underwent multigene panel testing for hereditary cancer predisposition syndromes. **Results:** Data were collected from 208 patients, of which 122 had CAM. Of these, 14.75% were BRCA1, 11.47% were BRCA 2, 15.57% were VUS, 4.09% were other high penetrance mutations, and 54.12% did not have mutations. The most prevalent histological type was non-special carcinoma (42.62%) and the second was carcinoma in situ (37.70), 3.27% micropapillary, 5.73% lobular, and 0.81% inflammatory. The most prevalent molecular type in the sample was HER 2 (44.26%), and triple-negative was the second most prevalent (16.39%), 40% corresponding to luminal HER 2 and luminal. However, among the BRCA 1 and 2 mutations, the most prevalent molecular type was the triple-negative (34.37% of a total of 32 BRCA 1 and 2). The age with the most prevalent CAM was the range of 35–45 years with 32.78%. In addition, 99% of the patients were female and 1% were male (only one male), 43.4% of the tumors were grade 2, and 55.73% of the lymph nodes were not involved, with 17.2% of the only 1 affected lymph node. **Conclusion:** It is concluded that the most significant mutations are in the BRCA 1 and 2 genes with the triple-negative molecular type being the most prevalent in these genes, showing that the results corroborate the data already existing in the literature, as well as the importance of the genetic panel for the best individualization and optimization of treatments.

Keywords: breast cancer; genetic testing; epidemiology.

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Emotional support for women with breast cancer: New approaches

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Objective: The objective of the Overcoming Project (OS) was to work alongside integrative medicine to increase the perception of personal well-being, quality of life, resilience, and happiness in women diagnosed with breast cancer (CM). Focused on emotional education, it is structured by support groups that promote positive psychology training and coaching sessions. **Methodology:** Based on prospective methodology focused on expanding emotional awareness for personal growth, it uses the following initial assessments and outcome measures as scales: Hope—Snyder, collaborators (2007) Satisfaction with Life (SWLS) — Diener, collaborators (1985) PANAS — Watson, D., Clark, and collaborators (2011) Achievements — Latham, Gary Flourishing — Diener, E.R. (2010). The work applies 30 concepts of positive psychology distributed in the acronym: O – Objectives, dreams, human being; V – Values, mission, engagement; E – Energy, positive Emotions; R – Roadmap, Planning; C – Comunication, relationships; O – Outlier Minds; M – Making decisions, solve problems; E – Emotional remeaning. The training lasts for 7 months, and 30 tools are worked on in 1h30 online classes, where women express thoughts, feelings, behaviors, and remeanings, creating bonds of friendship and joint development. The classes are followed by individual coaching sessions. The classes and written records of coaching sessions are recorded on a proprietary technological platform, which women have access to for 1 year. **Results:** Overall average results of the 55 women served: Increase: Hope: 9.45%; Life satisfaction: 8.23%; Achievements: 3.56%; Flourishing: 5.42%; Motivation: 5.45; Positive emotions: 8.3%. Decrease: Negative emotions: -14.3% **Conclusion:** The work has immense potential to contribute to the emotional health and quality of life of women with CM as emotional awareness causes significant transformations for patients in physical, emotional, social, relationship, and career levels, contributing to healthier and more adherent lifestyle habits to treatment needs, in addition to the ease of scale delivery.

Keywords: breast cancer; positive psychology; quality of life.

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Magnetic resonance study of the breast: Diffusion sequence analysis

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Objective: The objective of this study was to evaluate the role of the diffusion sequence and respective apparent diffusion coefficient (ADC) map in the study of the breast by magnetic resonance imaging (MRI). **Methodology:** This is a retrospective cross-sectional study to evaluate additional breast MRI scan sequences. The study included exams of women with indication for MRI referred, by spontaneous demand, to a private supplementary health imaging diagnostic service in the city of Goiânia, GO, from July 2021 to January 2022. The sample was divided according to the BI-RADS® classification into two groups, one with low suspicion for classifications 1, 2, and 3 and another with high suspicion for classifications 0, 4, 5, and 6. The distribution of the sample profile in patients with BI-RADS® MRI low suspicion and high suspicion was tested by applying Pearson's chi-square test, relative frequency, and absolute frequency. Data were analyzed using the Statistical Package for Social Science (IBM Corporation, Armonk, USA) version 26.0 with a significance level of 5% ($p<0.05$). This study was approved by the research ethics committee. **Results:** A total of 307 exams of women with indications for breast MRI participated in the study. Of the exams analyzed, the prevalent clinical indication (33.3%) on images with restriction was a breast lump. Fifty-seven (18.6%) of the exams presented restriction to diffusion with confirmation on the ADC map in the values of b50, b400, and b800. The distribution of the diffusion sequence result in relation to the BI-RADS® MRI low suspicion and high suspicion showed that water restriction was concordant ($p<0.01$), occurring in 82% of the cases of high suspicion. **Conclusion:** Diffusion contributes with additional data about images of high suspicion by standard MRI.

Keywords: breast; diffusion; magnetic resonance.

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Breast cancer and paraneoplastic dermatomyositis: A literature review

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Objective: Breast cancer (BC) is the most common malignancy in women. Contrastingly, dermatomyositis (DM) is a rare idiopathic inflammatory myopathy characterized by symmetric proximal muscle weakness and skin lesions. Gottron's papules and heliotrope are pathognomonic signs. This article aimed to describe how the diagnosis and treatment of patients with both diseases have been performed. **Methodology:** As this study consists of a literature review, submission to the Research Ethics Committee was not necessary. Articles indexed in the PubMed and SciELO electronic databases were collected. Cross-sectional and retrospective observational studies were selected using the following descriptors: (Breast Cancer) AND (Dermatomyositis). Finally, 19 studies were read in full and included in this systematic review. **Results:** An underlying neoplasm is present in 50% of DM patients older than 45 years. A newly diagnosed DM in the latter, should, therefore, be associated with an etiologic search of paraneoplastic origin. This may allow an early BC detection. This is corroborated by the significant stage 1 BC detected in patients with rheumatic diseases, according to a cohort analysis. Furthermore, cases in which DM indicated cancer recurrence have been reported. DM is associated with higher BC mortality, and the most correlated histotype is invasive ductal carcinoma. Currently, there are no guidelines or randomized trials for the management of BC complicated by DM. Therapeutic management of DM is mainly based on corticosteroids and immunosuppressive agents. However, previously published case reports indicated that surgical excision of the tumor is successful, as it can stop the progression of DM and prevent deterioration of muscle function. **Conclusion:** BC can feature uncommon presentations, such as paraneoplastic DM. Due to the absence of guidelines for the management of BC concomitant with DM, a multidisciplinary approach, including oncologists, dermatologists, and rheumatologists, is mandatory.

Keywords: breast cancer; dermatomyositis; rheumatic diseases.

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Epidemiology of male breast cancer in Brazil: An analysis of patients undergoing treatment in the public health system

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Objective: The objective of this study was to understand the epidemiological profile of breast cancer in men in Brazil, in order to improve care for these patients. **Methodology:** This study is an ecological, observational, cross-sectional analysis based on retrospective data from the publicly available National Oncology Database (DATASUS — SISCAN/Cancer Information System). The study utilized a National Tracking Database as the primary data source. Descriptive analyses of sociodemographic characteristics of patients, including the geographic region of diagnosis, and age range of affected men, were performed. The study also evaluated specific data regarding breast cancer, including clinical staging and types of treatment. The relationship between age group, staging, and treatment according to staging was also evaluated. **Results:** During the analyzed period of 2017–2021, a total of 4,327 cases of breast cancer in men were diagnosed and recorded in the system, representing 1.81% of all breast cancers registered during this period. The majority of cases were diagnosed in the Southeast region (41%), followed by the Northeast region (37%). In terms of age, the majority of patients were over 54 years (68.9%), with 19.1% of patients between 40 and 54 years, and 12% of all registered cases occurred in patients under 40 years. Clinical examination was used to diagnose 62.8% of men, while imaging examinations were used to diagnose 37.2%. Treatment options included chemotherapy (55.7%), surgical treatment (35.6%), and radiotherapy (8.7%). **Conclusion:** Breast cancer in men is a rare disease that should not be neglected. It is often diagnosed at more advanced stages, which leads to more invasive treatments. Men with known risk factors should be advised to seek medical attention as soon as they feel a palpable retroareolar mass to ensure a prompt and accurate diagnosis. It is important to raise awareness of this disease and encourage early detection and treatment to improve outcomes for men with breast cancer.

Keywords: breast cancer; epidemiology; men.

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Cohort study on patients with breast cancer treated by neoadjuvant endocrine therapy at hospital nossa Senhora da Conceição, Porto Alegre, RS

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Objective: Our study aimed to analyze the outcomes of a cohort study on patients in Hospital Nossa Senhora da Conceição, Porto Alegre, RS, undergoing neoadjuvant endocrine therapy (NET) for breast cancer. **Methodology:** A retrospective cohort study was conducted on 28 patients diagnosed with luminal tumors (ER+/HER2–) in a tertiary care center. The patients were treated with NET based on tamoxifen, anastrozole, or letrozole and subsequently operated on or not at clinical discretion. The data on histological classification, treatment time and response, and tumor progression rate were evaluated by the medical chart. **Results:** The mean patient age was 78 (45–91) years. The most common histological type was ductal (85.7%), followed by lobular (7.1%) and mucinous (7.1%). Low tumor grade (G1) was observed in 14.2% of cases, grade 2 in 71.4%, and grade 3 in 7.1%. Regarding lymph node involvement, 64.2% were NO, 32.1% N1, and 3.6% N2. The mean duration of NET was 22 months, and most patients presented tumor downstaging, with an initial mean tumor size of 3.2 cm and a final mean of 1.8 cm. At the end of the treatment, 60.7% of the patients showed a decrease in tumor size, 28.5% disease stability, and 10.7% disease progression. Of the patients with tumor regression, 21.4% had a complete pathological response to NET. These data are in line with previous literature reporting response rates between 20% and 70% after 3–4 months of NET, which can increase to up to 88% in 12 months. **Conclusion:** Our cohort corroborates previous literature and supports the effectiveness of NET for the downstaging of luminal breast cancer.

Keywords: breast neoplasms; neoadjuvant therapy; tumor burden; estrogen receptors.

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Correlation of age group and characterization of findings breast magnetic resonance imaging with BI-RADS® of high and low suspicion

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Objective: The objective of this study was to analyze magnetic resonance imaging (MRI) BI-RADS® using criteria of high and low suspicion in relation to age group variables and imaging findings. **Methodology:** This is a cross-sectional retrospective study of analysis of breast MRI exams in an imaging clinic in the city of Goiânia, GO, from 2021 to 2022. The sample was divided according to the BI-RADS® classification into two groups, one with low suspicion for classifications 1, 2, and 3 and another one of high suspicion for classifications 0, 4, 5, and 6. The sample profile of patients with BI-RADS® MR low and high suspicion was tested by applying Pearson's chi-square test, relative frequency, and absolute frequency, analyzed using the Statistical Package for Social Science (SPSS 26.0) with a significance of 5% ($p<0.05$). This study was approved by the research ethics committee. **Results:** A total of 307 exams with indications for MRI were evaluated. Data on the age of patients inferred that the mean was 49.1 years (standard deviation 11.5) and ranged from 24 to 83 years, and 61 (19.9%) were aged ≥60 years. When evaluating the BI-RADS® MRI results with the low and high suspicion criteria, women aged 60 years or older had a significant prevalence ($p=0.03$) of high suspicion. The concordant findings described in the examination report were breast lump ($p<0.01$), cyst ($p<0.01$), nonspecific enhancement ($p<0.01$), post-surgical alterations ($p<0.01$), fold of the implant ($p=0.04$), and inflammatory process ($p=0.04$), prevailing findings nodule (77%) for high suspicion and cyst (11.5%) for low suspicion. **Conclusion:** The association of BI-RADS® of high suspicion with age showed that patients aged ≥60 years are more likely to have high-risk lesions; in the exams, the breast lumps presented concordance for high suspicion and the cysts concordance for low suspicion.

Keywords: breast; breast cancer; magnetic resonance.

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One-STEP TechniqueTM for harvesting fat graft: A new technology to improve the outcome in breast reconstruction

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Objective: The authors present a new technique that provides the harvest of the fat graft and conduct its immediate grafting in the breast reconstructed, after the treatment of breast cancer. **Methodology:** A total of 42 cases were performed by the senior author from April 2019 to December 2022, in patients submitted to breast reconstruction procedures in private hospitals in Goiânia, Goiás, Brazil. All patients have been submitted to surgical treatment of breast cancer in the past, whether by conservative treatment with partial resection and radiotherapy or any kind of mastectomy and implant-based breast reconstruction. Some patients had adjuvant radiotherapy. The Selective Tissue Engineering Photostimulation Technique (One-STEP Technique™) involves using a diode laser with a wavelength of 1,210 nm applied to the subcutaneous tissue from the abdomen, hips, medial thighs, or axillary extension, before harvesting the fat grafts. The fat graft obtained by the One-STEP technique has innovative characteristics; as the laser is specific for the subcutaneous tissue, it reaches its maximum energy at the adipocytes causing them to vibrate, denaturing the connective tissue and releasing the adipocytes and stromal vascular fraction. The fat grafting was carried out immediately after the fat extraction, as an adjunct to improve the quality of the usual results, and no additional processing steps are required. The evaluation of results was performed at 40 and 90 days postoperatively. **Results:** The technique features make it easier to aspirate the graft and preserve the viability of cells. The authors observed an excellent take of the grafted fat showing great improvement in the skin quality and reduced formation of oil cysts and calcifications. Some patients showed great improvement even in radiated skin. **Conclusion:** The One-STEP Technique™ is an excellent alternative to improve the quality of the fat graft in order to achieve a more aesthetic breast reconstruction.

Keywords: tissue grafting; subcutaneous tissue; diode laser; breast reconstruction; breast cancer.

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Male breast cancer: How to optimize the diagnosis?

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Objective: Male breast cancer (MaBC) is a rare disease that represents about 1% of all cases of breast cancer (BC) in Brazil. The scarcity of screening campaigns hinders early diagnosis, directly affecting treatment and prognosis. Therefore, this study aimed to increase the visibility, among health professionals, for the aforementioned disease, describing how screening and diagnosis have been performed until now. **Methodology:** This study is a systematic literature review. Articles indexed in the electronic databases PubMed, SciELO, and ScienceDirect were collected. Studies were selected using the following descriptors and keywords: (Breast Cancer) AND (Men). **Results:** The avoidance of medical services by men, the absence of guidelines for the management of MaBC, and the rarity of this disease contribute to late diagnosis. The average delay in diagnosis ranges from 6 to 10 months after the onset of symptoms, and about 40% are diagnosed in stages III and IV. Clinical and radiological evaluation and tissue biopsy are essential for diagnosis. Screening should be initiated by evaluating risk factors, such as advanced age, radiation therapy, obesity, hormone imbalance, and BRCA2 mutations. The main clinical finding is a single, retroareolar, and painless mass, usually in the left breast. It can involve axillary lymph nodes, and, in rarer cases, nipple retraction, papillary discharge, and ulceration can be found. Mammography in men is generally more sensitive than in women. For biopsy, core biopsy is the preferred method. **Conclusion:** Despite its rarity, the MaBC mortality rate is higher than women BC. That may be due to unawareness of the disease among patients and lack of guidelines, possibly leading to medical negligence. Hence, careful attention to breast complaints, especially in high-risk patients, is mandatory to avoid late diagnosis. Promoting public awareness about MaBC and its symptoms is also required. Furthermore, the development of guidelines for diagnostic purposes would improve the management of MaBC.

Keywords: male breast cancer; early detection of cancer; diagnostic screening programs.

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Evaluation of the prevalence of breast cancer diagnosis before and during the COVID-19 pandemic in Brazil

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Objective: The coronavirus disease 2019 (COVID-19) pandemic brought significant impacts to the healthcare system due to the new demands generated, which in turn hindered the prevalence of breast cancer diagnosis in Brazil. In this context, this study sought to investigate the prevalence of breast cancer tracking and diagnosis between the federation's regions during 2018 and 2022. **Methodology:** This is a cross-sectional study using data collected from the Informatics Department of the Unified Health System (DATASUS) on breast cancer diagnosis between January 2018 and December 2022, in the regions of Brazil. The criteria for selection were the number of mammography exams, using the Breast Imaging-Report and Data System (BI-RADS) score, and the number of positive histopathologic exams. The results were analyzed mathematically. **Results:** In 2020, compared with 2019, considering the number of mammography exams and malignant breast findings, there was a reduction of 39.0% and 26.6%, respectively. In each region, save for the North, there was a higher reduction than observed at the national level. However, in 2021, there was an increase in the rate of mammography exams and malignant breast findings, and in 2022, there was the highest number of mammography exams, histopathologic exams, and breast cancer diagnoses, since 2018, across the entire country. **Conclusion:** There was a noticeable decrease in the number of mammography exams and histopathologic exams, particularly during 2020, and the highest number of exams and diagnoses, in the last 5 years, in 2022, after the majority of the population was vaccinated and COVID-19 cases decreased. The data show the impairment in the normal course of preventive exams in the country, considering the reduction of trips and referrals to hospitals, in non-urgent cases, given the population's fear of COVID-19, consequently reducing the frequency of prevention and early breast cancer diagnosis.

Keywords: breast neoplasms; COVID-19; mammography.

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Phylloid tumor: Clinical–epidemiological profile in a reference oncology clinic in the capital of Piauí

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Objective: The objective of this study was to know the clinical–epidemiological profile of patients diagnosed with phylloid breast tumor, in the period from December 2006 to January 2023, in a reference oncology clinic in the city of Teresina, PI. **Methodology:** This is an observational, descriptive, quantitative, and retrospective study carried out through data collection from medical records. We analyzed 982 medical records of female patients with breast cancer. Variables such as age, personal and family history of cancer, presence of pathogenic variants in the panel tested, and pharmacological and surgical interventions were analyzed, tabulated, and analyzed descriptively in Microsoft Excel. The study included all the medical records of patients seen in this period, excluding those who did not have breast cancer or whose records did not provide sufficient information. The study was approved by the Research Ethics Committee, opinion number 30154720.0.0000.5209. **Results:** Of the patients diagnosed with breast cancer, those with phylloid tumors represented 0.5% of the total, with a mean age of 45 years. Four types of incident diagnoses were found, namely, borderline phylloid tumor (40%), malignant phylloid tumor associated with the heterologous component of liposarcoma (20%), benign phylloid tumor (20%), and phylloid breast tumor (20%). Among the clinical characteristics, the cases that presented a survival of the patients without the disease represented 40% in opposition to the cases of survival with the disease that represented 60%, and the largest tumor size was 11.5 cm. **Conclusion:** In this study, the cumulative incidence of phylloid breast tumors in women diagnosed with breast cancer in the study population from December 2006 to January 2023 was 0.5%, with the phylloid borderline tumor having the highest prevalence among the cases studied.

Keywords: breast cancer.

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Characterization of chronic pain in women undergoing breast cancer treatment

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Objective: The objective of this study was to characterize chronic pain in women undergoing surgical treatment for breast cancer. **Methodology:** This is a transversal study of quantitative and qualitative basis. Data collection was performed at a tertiary breast cancer treatment center located in central Brazil. We used the McGill Pain Questionnaire structured pain assessment questionnaire in its Brazilian version (BR – MPQ) and the Visual Analog Scale (VAS). **Results:** A total of 99 patients were interviewed, of which 46 were included in the study. Notably, 30 (65.2%) patients underwent quadrantectomy for surgical treatment of breast cancer. A type of breast reconstruction technique was used in 26 (56.5%) patients, most of them immediately. Sentinel lymph node biopsy was performed in 45 (97.8%) patients, but 22 (47.8%) required axillary lymphadenectomy for some oncological reason. Notably, 35 (76.0%) patients underwent neoadjuvant or adjuvant chemotherapy, and 40 underwent radiotherapy (87.0%). We observed a predominance of intermittent and pulsating pain, with a mean intensity of 5.5 on the VAS. In the McGill questionnaire, a total score of 28.24 (±14.51) was observed. All participants had chronic pain of the intermittent type, starting after surgery, located in the surgery scar and in the ipsilateral arm. The sensory domain contributed the most to pain perception, with an average of 16.83 (±7.52). The pain assessment category was reported by 41 (89.1%) patients, followed by the sensitive (n=15; 32.6%), miscellaneous (n=14; 30.4%), and affective (n=12; 26.1%). Chronic pain was predominantly characterized as pulsating, throbbing, sensitive, punishing, and strong. According to the VAS, the average intensity reported was 5.52 (±2.61). **Conclusion:** Our study characterized chronic pain in women undergoing surgical treatment for breast cancer, which may help identify and manage this symptom.

Keywords: breast cancer; mastectomy; chronic pain.

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Scope of diagnostic and screening methods for breast cancer among women in the state of pernambuco: Knowing in order to intervene

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Objective: The objective of this study was to know the diagnostic and screeming methods for breast cancer, made available by public health services and their reach among women in the state of Pernambuco. **Methodology:** This is a cross-sectional, descriptive, and retrospective study, whose data were obtained by consulting the Siscan database, made available by datasus. This study population consisted of female patients of all age groups in the state, from January to December 2021. The variables were grouped taking into account three indicators: mammography, cytology, and histology. **Results:** A total of 147,852 mammograms were performed, with the 50–54-year-old group being the most prevalent. Of the total, 145,745 were for screening purposes and 2,136 for diagnostic purposes of the mammographic reports obtained results with BI-RADS 4 and 5. There was a predominance BI-RADS 1. The number of cytology performed was only 404, with the most prevalent age group between 45 and 49 years, with 180 tumors of solid type, where 12.6% were positive, suspected, or indeterminate for malignancy. According to the histopathological report, the rate of malignant breast lesions was approximately 47.92%, with prevalence in the age group between 45 and 49 years. Only 1,810 of the lesions could be diagnosed by imaging and 879 were palpable on clinical breast examination. **Conclusion:** This study demonstrated the need to expand the age group recommend by the ministry of health for breast cancer screeming, for an earlier onset, from the age of 40 years. In addition, the scope of diagnostic methods is still frustrating, as a small number of women progress in the investigation.

Keywords: breast neoplasms; womens health.

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Pathologic complete response and efficacy with neoadjuvant anthracycline followed by paclitaxel, trastuzumab, and pertuzumab in patients with HER2-positive early breast cancer: A real-world experience of Brazil

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Objective: Compared with other subtypes of breast cancer, a higher percentage of HER2-positive patients achieve a pathologic complete response (pCR) to neoadjuvant chemotherapy (NACT). Most randomized studies of neoadjuvant therapy in HER2-positive breast cancer have employed anthracycline and taxane-based NACT regimens. In the aggregate, these studies suggest a pCR rate approaching 50% among patients with operable HER2-positive disease receiving anthracycline, taxane, and trastuzumab-based therapy (AC-TH). In the phase II TRYPHAENA study, the pCR rate reported for the docetaxel, carboplatin, trastuzumab, and pertuzumab (TCHP) regimen was 64% compared with 55% among those treated with an anthracycline-based regimen (FEC-THP), a difference that was not statistically significant. Anthracycline-free regimes are currently preferred as NACT in international guidelines, but, in the Brazilian reality, anthracycline regimes such as AC-THP are still widely used. As a practical example, a portion of patients with locally advanced disease need to start NACT but depend on ISH (in-situ hybridization) result to HER-2 directed therapy. **Methodology:** A retrospective analysis was conducted on patients treated with AC-THP in the neoadjuvant setting in a Brazilian breast cancer center in Goiânia, Goiás. A medical record review was conducted on patients treated with AC-THP in the neoadjuvant setting and at least 1 year of follow-up after surgery. Data on patient demographics, stage of breast cancer, systemic therapy, pathology reports, and surgical data were collected. **Results:** Information from 44 patients was reviewed and evaluated for total pCR (tpCR, ypT0/is ypN0). The average age was 50.3 years (range 28–75 years, with 18% over 65 years old). HER2 positivity by IHC 3+ was achieved in 80% of patients, and 20% had IHC 2+ and ISH positive. In the 63.4%, the estrogen receptor (ER) positivity was > or = 10%, and 38.6% and 25% had clinical stages IIB and IIA, respectively. Overall, 35 (80%) received AC dose dense, 18 (41%) patients underwent lumpectomy, and 26 (59%) underwent mastectomy. The average number of nodes removed in SNB patients (86.3%) was 3 compared with 15.5 in ALND patients (13.7%). A tpCR occurred in 31/44 (70.5%) patients overall, in 14/16 (87.5%) patients with HR-negative or weak, and in 17/28 (60.7%) HR-positive disease. After an average of 44.2 months of follow-up, 95.45% of patients were still free of breast cancer recurrence (2 relapses) and the overall survival was 100%. **Conclusion:** In the report from Memorial Sloan Kettering Cancer Center in 2017, tpCR occurred in 41/57 (72%) patients. In the cohort A from Berenice trial, the pCR rate was 61.8%. Cross-trial comparisons should be interpreted with caution given the differences in patient populations, but based on this report, our real-world results were at least comparable with randomized trials and with results from developed countries.

Keywords: breast cancer; anthracycline.

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Physiotherapy in the immediate post-operative breast cancer: A primary care proposal

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Objective: The aim of this study was to verify whether the primary care strategies carried out by physiotherapy in the immediate postoperative period of breast cancer are effective. **Methodology:** This is a retrospective study of consultations carried out in the breast ward by the physiotherapy service, including screening of consultations from February 2019 to February 2023. The data analyzed were age, education, marital status, parity, hormonal status, diagnosis, dominant limb, type of surgery, condition of the scar, need for referral to physiotherapeutic care, and the physiotherapeutic strategies adopted at that time. The study was approved by the Brazil Platform (CAAE 56561222.9.0000.0084). **Results:** A total of 122 files were analyzed, and 12 (9.8%) were excluded due to missing data; the mean age was 51.66±16.2 years, 31 (28%) had completed high school, 43 (39%) were married, 26 (23%) were nulliparous, and 58 (51%) underwent menopause. As for the diagnosis, 78 (70%) discovered it through self-examination and only 28 (25%) through mammography, 45 (40%) had cancer on the dominant side. Quandrantectomy was the most common surgical type in 40 (36%), followed by sectorectomy in 21 (19%), and lymph node dissection was present in 11 (10%). Inflammatory signs were not identified in 58 (52.7%), and 69 (62.7%) were referred for physiotherapy. All women were instructed to freely maintain upper limb movements and taught to perform simple free active movements at home for the prevention of lymphedema, being reinforced by the delivery of educational material. After a week, it was observed that all of them had no signs of lymphedema and or upper limb movement loss. **Conclusion:** The performance of physiotherapy in the immediate postoperative period is extremely relevant in caring for the scar/hydration of the skin and in stimulating free active exercise that may prevent the development of lymphedema or even functional limitation due to kinesiophobia. Delivery of educational material, as well as physiotherapeutic follow-up at the time of chemotherapy/radiotherapy, enhances the positive results.

Keywords: breast neoplasms; physical therapy modalities; Primary Health Care; kinesiophobia; breast cancer lymphedema.

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Male breast cancer: A public health problem that still lacks prevention among men

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Objective: This study aimed to bring epidemiological information about male breast cancer (BC) and also prevention importance to this group. **Methodology:** For this purpose, data from the Department of Informatics of the Unified Health System (DATA-SUS) were used, in which cases were investigated by gender according to the year of diagnosis of BC in Brazil, between the years 2013 and 2022. **Results:** BC is the second most prevalent cancer in the world. In Brazil, BC will represent, according to the National Cancer Institute, it is estimated that, between 2023 and 2025, 10.2% of all types of cancer in the country. Furthermore, it is common knowledge that BC also affects the male population, representing 1% of cases; however, its incidence has increased significantly throughout the world, including in our country in the last decade. Thus, there was a significant increase in the analyzed data during this period of time, in which, respectively, we had between 2013 and 2022, 229, 267, 255, 274, 268, 482, 1,021, 1,059, 1,493, and 848 cases of male BC. Moreover, when analyzing BC screening and combat campaigns in Brazil, it appears that they, for the most part, dialogue only with women, leaving an illusion that men should not be concerned with this category of cancer. In addition, studies reveal that male BC patients had worse survival outcomes compared with female patients. **Conclusion:** Therefore, we conclude that public policies and emphatic and educational campaigns are necessary, which explain the reality of male BC, with the intention of informing its risks, in an attempt to increase screening, thus reducing the incidence and mortality of BC in men.

Keywords: disease prevention; epidemiology; male breast cancer.

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Survival analysis of patients with 10 or more axillary lymph nodes compromised by breast cancer

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Objective: The objective of this study was to evaluate survival in patients with 10 or more compromised axillary lymph nodes. **Methodology:** This is a retrospective cohort study conducted in a private oncology clinic in Teresina, Piauí, Brazil, in the period 1999–2023, where medical records of 12 patients with breast cancer who had 10 or more compromised axillary lymph nodes were analyzed. The following variables were observed: patient age, histological type of tumor, tumor size, lymphatic invasion, vascular invasion, perineural invasion, number of lymph nodes dissected, number of axillary lymph nodes compromised, treatment with radiotherapy and/or chemotherapy, occurrence of recurrence and/or metastasis, and patient survival. Survival functions were calculated using the Kaplan-Meier method. This study was approved by the Research Ethics Committee of the Universidade Estadual do Piauí (CEP-UESPI), Teresina, Piauí, Brazil, opinion number 4.311.835. **Results:** The mean age of the patients was 58.66 years. The mean tumor size was 4.6 cm. There was a predominance of invasive carcinoma of the non-special histological type (10–83.33%), followed by invasive lobular carcinoma (1–8.33%) and invasive tubular carcinoma (1–8.33%). As for lymphovascular invasion, 6 (50%) patients had vascular invasion, 7 (58.33%) had lymphatic invasion, and 3 (25%) had perineural invasion. The mean number of LAX compromised was 13.17, while the mean number of lymph nodes dissected was 20.25. Of the 12 patients, 9 were treated with radiotherapy (75%) and 10 were treated with chemotherapy (83.33%). Of the total, 6 (50%) patients had some form of recurrence, of whom 4 progressed to death. Distant metastasis occurred in 4 (30%) patients. **Conclusion:** The survival rate in a time interval of 5 years for patients with 10 or more compromised axillary lymph nodes was 51.6%.

Keywords: survival analysis; lymph nodes; breast cancer.

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Metabolic syndrome as a risk factor for the development of breast cancer in women and its impact on prognosis

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Objective: Metabolic syndrome (MS) is a complex metabolic disorder. The aforementioned main components are systemic arterial hypertension, insulin resistance, obesity, and dyslipidemia. Highly acclaimed evidence supports the hypothesis that MS may be associated with breast cancer (BC) development and worse prognosis. The increasing incidence rates of both MS and BC seem to corroborate this theory. This article aims to assess the association between MS and BC development, later diagnosis, and worse prognosis. **Methodology:** An inclusive literature review was conducted on PubMed and SciELO. **Results:** First, excess of adipose tissue characteristic of MS not only enhances the expression of pro-inflammatory factors but also increases the aromatization process. The latter is a neuroendocrine change that occurs in adipocytes and leads to greater estrogen synthesis, which increases the risk for the development of BC. It was concluded that MS is an independent risk factor for BC with a relative risk (RR) of 1.75%. MS is also associated with more aggressive and poorer differentiated tumors. Women with MS have higher rates of BC in stages III and IV. Furthermore, hyperinsulinemia and hyperglycemia are directly related to axillary lymph node involvement, high histological grade, and late staging. Moreover, it is known that women diagnosed with both MS and BC have worse oncologic prognosis. The aforesaid is exemplified by the increased recurrences and decreased survival in BC associated with high fasting plasma insulin levels. Additionally, obese women with BC have a worse prognosis and a higher risk of developing a second primary BC. **Conclusion:** As mentioned above, MS is significantly associated with an increased risk, invasive progression, and adverse outcomes of BC due to neuroendocrine changes, namely, abnormal estrogen levels. It is therefore strongly recommended to adhere to dietary strategies and regular physical activities in order to prevent MS. Consequently, there would be a possibility of reducing the incidence rates of BC.

Keywords: metabolic syndrome; breast cancer; lymph node metastasis; aromatase; estrogen effects.

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Radiotherapy and breast cancer: The risks of malignancies secondary to breast cancer treatment in patients with Li-Fraumeni syndrome

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Objective: This study aimed to highlight the risks of malignancy induced by radiotherapy in the treatment of patients with breast cancer with Li-Fraumeni syndrome. **Methodology:** To this end, a literature review was carried out in the PubMed scientific database, using the descriptors: "Li-Fraumeni syndrome," "TP53 gene," and "Malignancies secondary to radiotherapy," and as inclusion criteria, it was used: works in Portuguese and English, not duplicated and between the years 2016–2023, with the intention of using the most recent sources for the search result. **Results:** DNA damage by ionizing radiation is the main mechanism of radiotherapy action; therefore, disturbances in DNA repair can result in increased sensitivity to cancer treatment recessive radiosensitivity, for example, in patients with Li-Fraumeni syndrome. This is an autosomal dominant inherited disease that is usually associated with abnormalities in the P53 tumor suppressor protein (TP53) gene, located on chromosome 17p13. That said, the risk of malignancies correlates with the type of TP53 germline pathogenic variant, with the TP53 p.R337H mutation being particularly prevalent in Brazil. According to a published study in the journal Breast Cancer Research and Treatment, the risk of radiation-induced malignancy associated with Li-Fraumeni syndrome was higher for sarcoma and thyroid cancer in 12% of patients studied. **Conclusion:** Thus, when initiating radiotherapy treatment, early molecular diagnosis, with the intention of finding the Li-Fraumani syndrome, and careful assessment of the risks and benefits of treatment are essential for these patients, considering that the physician must always care for the well-being of the patient and, above all, do not cause harm to the patient.

Keywords: breast cancer; Li-Fraumeni syndrome; radiotherapy.

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Special breast tumors: Clinical–epidemiological profile in a reference oncology reference oncology clinic in the capital of Piauí

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Objective: The objective of this study was to identify the clinical and epidemiological profile of patients diagnosed with special breast tumors, in the period from December 2006 to January 2023, in a reference oncology clinic in the city of Teresina, PI. **Methodology:** This is an observational, descriptive, quantitative, and retrospective study carried out through data collection from medical records. A total of 982 medical records of female patients with breast cancer were analyzed. Variables such as age, personal and family history of cancer, presence of pathogenic variants in the panel tested, and pharmacological and surgical interventions were analyzed, tabulated, and analyzed descriptively in Microsoft Excel. The study included all the medical records of patients seen in this period, excluding those who did not have breast cancer or whose records did not provide sufficient information. The study was approved by the Research Ethics Committee, advice number 30154720000005209. **Results:** Of the patients diagnosed with breast cancer, those with special breast tumors represented 1.42% of the total, with a mean age of 56 years. Four types of incident diagnoses were found: papillary carcinoma (35.7%), mucinous (28.6%), metaplastic (21.4%), and medullary (14.2%). Among the clinical characteristics, the most common stage was stage IIA (78.6%), followed by stage IIB (7.1%). Most patients had well-differentiated (50%) or moderately differentiated (21.4%) tumors with negative lymph node involvement. In two of the three cases diagnosed as metaplastic carcinoma, large tumors 9.2 and 15.5 cm in length were observed, with recurrence in both cases. All cases of mucinous carcinoma had the RE+/RP+ pattern. **Conclusion:** In this study, the cumulative incidence of special breast tumors in women diagnosed with breast cancer in the study population from December 2006 to January 2023 was 1.42%, and of this total, 35.7% were of the carcinoma type papillary carcinoma.

Keywords: breast cancer.

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Reconstruction immediate or delay in SUS hospital

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Objective: The objective of this study was to understand the epidemiological profile of women with breast cancer who underwent breast reconstruction in a reference hospital in the state of Pernambuco **Methodology:** This is an observational, retrospective research with an analytical character and descriptive approach. The data were collected through a questionnaire sociodemographic and clinical–surgical history of patients with breast carcinoma and then analyzed by the SPSS software, version 18, with the percentages of the categories evaluated by the chi-square test, considering the significance level of 5%. The comparison of analyses was significant ($p<0.005$), showing that the profile described is the most frequent in the group of patients evaluated. This search was submitted and approved by the Ethics and Research Committee on Human Beings of Fundação Amaury de Medeiros, CAAE: 42457420.1.0000.5193. **Results:** A non-probabilistic sample of 400 records was obtained in 10 years at a tertiary hospital in Recife (PE), most of them with mean age between 46 and 59 years (45.3%), brown (61.1%), married (79.1%), with education until high school (60.7%), household professionals (45%), non-smokers (84.9%), who do not consume alcohol (94.9%), and had immediate reconstruction after mastectomy (70.3%). **Conclusion:** The findings support that patients with high educational levels are likely to undergo immediate breast reconstruction. Pointing out that the socioeconomic level significantly influences the rates of breast reconstruction after mastectomy.

Keywords: epidemiology; mastectomy; breast cancer; breast reconstruction.

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Mammary Paget's disease: Clinical–epidemiological profile in a reference oncology clinic in the capital of Piauí

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Objective: The objective of this study was to identify the clinical and epidemiological profile of patients diagnosed with breast Paget's disease from December 2006 to January 2023 in a reference oncology clinic in the city of Teresina, PI, Brazil. **Methodology:** This is an observational, descriptive, quantitative, and retrospective study conducted by collecting the data from medical records. We analyzed 982 medical records of female patients with breast cancer. Variables such as age, personal and family history of cancer, presence of pathogenic variants in the panel tested, and pharmacological and surgical interventions were analyzed, tabulated, and analyzed descriptively in Microsoft Excel. The study included all the medical records of patients seen in this period, excluding those who did not have breast cancer or whose records did not provide sufficient information. The study was approved by the Research Ethics Committee, opinion number 3015472.0.0000.05209. **Results:** Of the patients diagnosed with breast cancer, those with the mammary form of Paget's disease represented 0.3% of the total. In two of the three cases, Paget's disease was associated with invasive ductal carcinoma and there was one case of Paget's tumor. The mean age was 57 years, and two cases were in postmenopausal women. Among the clinical characteristics, the degree of differentiation most commonly found was G3 (66.7%), followed by G2 (33.3%). All patients had RE+/RP+ pattern. **Conclusion:** In this study, the cumulative incidence of Paget's tumor of the breast in women diagnosed with breast cancer in the study population from December 2006 to January 2023 was 0.3%, and of this total, 66.7% were associated with invasive ductal carcinoma.

Keywords: breast cancer; Paget's disease of the breast; women.

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Prepectoral breast reconstruction. Report after 4 years of follow-up: Experience of a Chilean tertiary general hospital

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Objective: Implant-based breast reconstruction (IBBR) has become the leading method for immediate breast reconstruction worldwide, for several years using the sub-pectoral plane. Post-mastectomy radiotherapy (PMRDT) and breast reconstruction are associated with complications including implant loss and animated breast deformity. The animated breast deformity can be avoided using the pre-pectoral plane IBBR. The objective of this report is to show 4 years of experience and results on pre-pectoral IBBR (PPIBBR) at a University Clinical Hospital. **Methodology:** The data were collected prospectively from a personal database. Selection criteria were based upon oncological considerations, multidisciplinary committee evaluation, and indication of mastectomy. The distance of tumors from the skin and proper subcutaneous fat thickness were evaluated. A review of general comorbidities, body mass index, smoking, breast weight, pathology report, and complications of any kind, including implant loss and its association with radiotherapy, was included. **Results:** The cohort study included 77 patients (81 PPIBBR procedures), from July 2019 to March 2023. The mean age was 47 (27–70) years. Eight (9.7%) patients were mutation carriers (4 BRCA1, 2 BRCA2, and 2 TP53). Out of 10 patients, 6 with bilateral breast reconstruction had a PPIBBR. Most of the procedures were done following the same technique and by the same senior surgeons' team. Mesh was used in 38% (31/81), mostly absorbable synthetic mesh. Most complications were considered mild (14.8%, n=12/81) or moderate (19.7%, n=16/81) and were managed as outpatient treatment. We have only 3 (3.7%) breast implant losses among 81 procedures and only one was related to PMRDT prior to actual reconstruction. **Conclusion:** PPIBBR is so far a safe and feasible breast reconstructive technique, with a very low complication rate in well-selected patients. It can be used for therapeutic or risk reduction purposes, and the aesthetic results are mostly good and excellent according to the Harris Scale evaluation and avoid the disadvantage of subpectoral implant placement.

Keywords: breast reconstruction; breast implant.