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RESEARCH ARTICLE

Three years clinico-epidemiological study of breast cancer patients at Clinical Oncology Department, Tanta University

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ABSTRACT

Background: Breast cancer represents the most frequently diagnosed cancer affecting women globally and is the second leading cause of cancer death among women, following lung cancer. Similarly, in Egypt, breast cancer is the most prevalent form of cancer in women, constituting 35.1% of all female cancer cases. **Aim:** This study describes the clinico-epidemiological and pathological pattern of breast cancer, including the analysis of investigational methods and treatment lines. **Patients and Methods:** This retrospective descriptive Hospital based clinico-epidemiological study was held at Clinical Oncology Department, Tanta University Hospitals for patients (n=1,210) who were histo-pathologically proven to have breast cancer presented at our department throughout the period between January 2019 to 31st December 2021. **Results:** Breast cancer cases represented about 20% of all cases in each year. The mean age was 53 (range 24 -90) years. Postmenopausal patients represented 63%. 43% of patients presented with stage II. The most common subtype was invasive ductal carcinoma (IDC; 88%). Most cases were luminal B (48.4%). At the end of of the study, 19.7% of non-metastatic patients developed metastasis either solitary or multiple, where bone was the most common site of metastasis followed by lung. 94.5% of all patients were alive. **Conclusion**: Breast cancer is a heterogenous disease and the treatment differs according to molecular type and stage. Early-stage breast cancer patients showed better survival than patients with late stage, where luminal cases had better survival than triple negative and HER2 positive cases.

Keywords: Breast cancer, Epidemiology, Survival analysis

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INTRODUCTION

Breast cancer constitutes 12.5% of all newly diagnosed cancer cases globally each year, rendering it the most prevalent malignancy worldwide (American Cancer Society, 2024). In Egypt, 17.8% of cancer patients, irrespective of sex, are diagnosed with breast cancer. Approximately 34.9% of female cancer patients are diagnosed with breast cancer, representing the highest incidence; conversely, in male populations, breast cancer constitutes 0.51% of all cancer cases (Ferlay et al., 2024).

Breast cancer is considered a multifactorial disease, with various factors influencing its occurrence. The incidence, mortality, and survival rates associated with the disease exhibit significant variation across different countries, which may be attributed to multiple factors, including population demographics, lifestyle, genetic predispositions (such as BRCA and PTEN mutations), and environmental factors (Zendehdel, 2018).

Breast cancer is classified pathologically into invasive or non-invasive neoplasm. Non-invasive neoplasms of the breast are primarily categorized into two principal types: lobular carcinoma in situ (LCIS) and ductal carcinoma in situ (DCIS), with DCIS accounting for 20% to 25% of cases. Invasive breast cancer is also subdivided into invasive ductal carcinoma (IDC) and invasive lobular carcinoma (ILC). Invasive ductal carcinoma represents the predominant form of breast cancer, accounting for 70% to 80% of invasive cases, while invasive lobular carcinoma constitutes 5% to 10%. Other less common types, such as medullary, tubular, and mucinous carcinomas, collectively account for

less than 5% of cases (Alkabban et al., 2019). The classification of breast cancer also includes four principal intrinsic or molecular subtypes based on gene expression patterns of the cancerous cells, which encompass luminal A and luminal B (60% to 70%), triple-negative or basal-like (15%), and HER2-enriched (12% to 20%) subtypes (Johnson et al., 2021).

Breast cancer is potentially curable in 70–80% of patients diagnosed with early-stage, non-metastatic disease. Conversely, advanced breast cancer with distant organ metastases is regarded as incurable with the currently available therapeutic modalities. The incidence of de novo metastatic breast cancer is estimated to be approximately 6-10%, and 20-30% of early-stage patients may develop metastasis during follow-up. Treatment regimens are tailored according to the molecular subtype of the disease. The management of breast cancer is inherently multidisciplinary, encompassing locoregional interventions (such as surgery and radiation therapy) and systemic therapies, which include endocrine therapy for estrogen receptor (ER) or progesterone receptor (PR) positive, cyclin-dependent kinase (CDK4/6) inhibitors, chemotherapy, human epidermal growth factor receptor 2 (anti-HER2) therapy for HER2-positive disease, poly(ADP-ribose) polymerase (PARP) inhibitors for BRCA mutation carriers, and, more recently, immunotherapy (Harbeck et al., 2019; Howlader et al., 2018).

PATIENTS AND METHODS

This retrospective descriptive Hospital based clinico-epidemiological study was held at Clinical Oncology Department, Tanta University Hospital, Egypt for patients who were histo-pathologically proven to have breast cancer throughout the period between January 2019 to 31st December 2021. This study was approved by the institutional ethical committee at Faculty of Medicine, Tanta university, Egypt (approval code # 35404/4/22).

Patient evaluation

All medical files were revised as:

History: regarding personal history, medical comorbidities, family history of breast cancer or other malignancies, reproductive history and menstrual history.

Clinical evaluations, laboratory investigation, radiological assessments and pathological findings

Line of treatment: Surgery, chemotherapy, hormonal therapy, CDK4/6 inhibitors, target therapy and immunotherapy.

Statistical methods

The data were meticulously gathered, complied, and subjected to analysis using percentage, mean, and median calculations utilizing the Statistical Package for the Social Sciences (SPSS) version 21; survival analysis was conducted through Kaplan-Meier analysis and log-rank test. The date for the final analysis was established in January 2024. Disease-free survival was calculated from the initiation of treatment until the recurrence or onset of metastasis. Overall survival was assessed from the date of diagnosis until death from any cause or the date of the last follow-up. Progression-free survival was calculated from the initiation of treatment until the occurrence of progression.

RESULTS

In our study, breast cancer cases represented about 20% of all cases, the highest presentation was from Gharbia (80.9%). The mean age was 53 (range 24 -90) years and over 30% of all cases aged above 50 to 60 years. Female patients represented 98.4% of all cases and 63% of them were Postmenopausal and 33.9% used contraceptive pills. Patients exhibiting a positive familial history of breast cancer constituted 10.7%, while 12.2% of individuals had a positive familial history of other malignancies, including ovarian and endometrial cancers and others. Hypertension was the most common comorbidity in our patients and 82.9% of patients were married. The incidence of bilateral cases was approximately 1% annually, whereas unilateral cases, whether right or left, accounted for about 50% each. Most cases were supra-areolar (66.6%) and 82.6% had solitary lesions (Table 1).

Table 1. Demographic data of the patients

Characteristic	Years				Test Statistic	p-value[2]
	2019 N = 379	2020 N = 383	2021 N = 448	Overall N = 1,210[1]		
Age						
Mean ± SD Median [IQR] Range	52.7 ± 11.4 53.0[43.1 - 61.0] 28.0 - 90.0	53.1 ± 11.3 53.0[44.0 - 61.0] 27.0 - 85.0	53.5 ±11.4 54.0 [45.0 - 62.0] 24.0 - 83.0	53.1 ± 11.4 53.4[44.6 - 61.0] 24.0 - 90.0	1.114	0.573[3]
Gender, n (%)					0.066	0.797[4]
Male	6 (1.6%)	5(1.3%)	8 (1.8%)	19 (1.6%)		
Female	373(98.4%)	378(98.7%)	440(98.2%)	1,191 (98.4%)		
Menstruation,n(%)					1.162	0.281[4]
Premenopause	143(38.3%)	145 (38.4%)	153(34.8%)	441 (37.0%)		
Postmenopause	230(61.7%)	233 (61.6%)	287(65.2%)	750 (63.0%)		
Contraceptive pills, n (%)					1.432	0.231[4]
No	101 (27%)	96 (25.4%)	155(35.2%)	352(29.6%)		
Yes	116(31%)	139(36.8%)	149(33.9%)	404(33.9%)		
Unknown	156(42%)	143(37.8%)	136(30.9%)	435(36.5%)		
Family history of breast cancer, n (%)					2.007	0.157[4]
+Ve	37 (9.8%)	36 (9.4%)	57 (12.7%)	130 (10.7%)		
Family history of other malignancy, n (%)					0.028	0.868[4]
+Ve	52 (13.7%)	34 (8.9%)	62 (13.8%)	148 (12.2%)		
Comorbidity, n (%)					0.105	0.746[4]
No	225 (59.4%)	231 (60.3%)	271 (60.5%)	727 (60.1%)		
Yes	154 (40.6%)	152 (39.7%)	177 (39.5%)	483 (39.9%)		
Hypertension	116 (30.6%)	111(29.0%)	128(28.6%)	355(29.3%)	0.398	0.528[4]
DM	79 (20.8%)	81 (21.1%)	75(16.7%)	235 (19.4%)	2.351	0.125[4]
HCV	12 (3.2%)	12 (3.1%)	6 (1.3%)	30 (2.5%)	2.988	0.084[4]
HBV	2 (0.5%)	0 (0.0%)	0 (0.0%)	2 (0.2%)	3.291	0.070[4]
Cardiac	25 (6.6%)	14 (3.7%)	30 (6.7%)	69 (5.7%)	0.026	0.873[4]
Respiratory	1 (0.3%)	1 (0.3%)	7 (1.6%)	9 (0.7%)	4.954	0.026*[4]
Cerebral	4 (1.1%)	2 (0.5%)	2 (0.4%)	8 (0.7%)	1.116	0.291[4]
Autoimmune	4 (1.1%)	2 (0.5%)	2 (0.4%)	8 (0.7%)	1.116	0.291[4]
Marriage, n (%)					1.533	0.216[4]
Married	337 (88.9%)	317 (82.8%)	349 (77.9%)	1,003 (82.9%)		
Divorced	7 (1.8%)	3 (0.8%)	4 (0.9%)	14 (1.2%)		
Widowed	32 (8.4%)	56 (14.6%)	82 (18.3%)	170 (14.0%)		
Single	3 (0.8%)	7 (1.8%)	13 (2.9%)	23 (1.9%)		
Affected breast, n (%)					0.284	0.594[4]
Left	189 (49.9%)	186 (48.6%)	231 (51.6%)	606 (50.1%)		
Right	186 (49.1%)	192 (50.1%)	212 (47.3%)	590 (48.8%)		
Bilateral	4 (1.1%)	5 (1.3%)	5 (1.1%)	14 (1.2%)		
Affected site, n (%)					0.391	0.532[4]
Supra-areolar	256 (67.5%)	262 (68.4%)	288 (64.3%)	806 (66.6%)		
Retro-areolar	52 (13.7%)	51 (13.3%)	68 (15.2%)	171 (14.1%)		
Infra-areolar	44 (11.6%)	48 (12.5%)	58 (12.9%)	150 (12.4%)		
Focality, n (%)					0.992	0.319[4]
Solitary	316 (83.4%)	322 (84.1%)	362 (80.8%)	1,000 (82.6%)		
Multifocal	36 (9.5%)	39 (10.2%)	52 (11.6%)	127 (10.5%)		
Multicenteric	27 (7.1%)	22 (5.7%)	34 (7.6%)	83 (6.9%)		

[1]n (%), [2] significant at p<0.05, [3] Kruskal-Wallis' test, [4]Chi-squared Test for Trend in.

Tumor stage, molecular and histopathological types

The most common presenting stage was stage II (520 patients, 43%) followed by stage III (448 patients, 37%) (Figure 1). Bone metastases were in 51% of all de-novo metastatic patients, followed by 33% having both bone & visceral and 16% had visceral metastasis. The most common pathological subtype was IDC (88%) followed by ILC (4.9%). Other rare pathologies represented around 1% of all cases (Table 2). Grade II was the most frequently represented grade (86.1%) of all cases followed by grade III (11.6%), then grade I (1%). Concerning LVI, 18.9% of all cases had no comment in their pathological reports while 44.6% had positive findings.

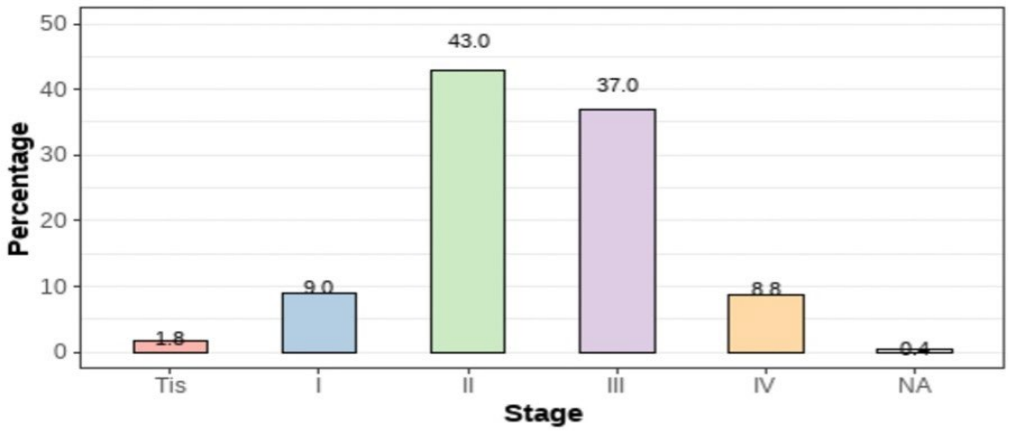

Figure 1. The stage of all cases at first presentation.

Table 2. Pathological types of the patients

Pathological Types, n (%)	Years			
	2019 N = 379	2020 N = 383	2021 N = 448	Overall N = 1,210
IDC	343 (90.7%)	340 (90.7%)	382 (86.2%)	1,065 (88.0%)
ILC	15 (4.0%)	15 (4.0%)	29 (6.5%)	59 (4.9%)
Mixed	10 (2.7%)	20 (5.3%)	17 (3.8%)	47 (4%)
DCIS	5 (1.3%)	5 (1.3%)	12 (2.7%)	22 (1.8%)
Mucinous	3 (0.8%)	1 (0.3%)	1 (0.2%)	5 (0.4%)
Adenocarcinoma	0 (0.0%)	0 (0.0%)	1 (0.2%)	1 (0.1%)
Medullary	2 (0.5%)	0 (0.0%)	1 (0.2%)	3 (0.2%)
Phylloides	1 (0.3%)	1 (0.3%)	1 (0.2%)	3 (0.2%)
Undifferentiated	0 (0.0%)	0 (0.0%)	3 (0.7%)	3 (0.2%)
papillary	0 (0.0%)	1 (0.3%)	1 (0.2%)	2 (0.2%)

Concerning PNI, 19.8% of all cases had no comment in their pathological reports while 21.7% had positive findings. Most cases were luminal B (586, 48.4%) followed by luminal A (282, 23.3%) (Table 3).

Management of breast cancer

Surgical interference: most patients (92.3%) underwent surgical interference (48.4% of cases underwent MRM and 43.9% underwent Conservative surgery), while 7.7% did not underwent any surgery due to poor general condition or de novo metastatic cases.

Role of systemic therapy: most cases (88.4%) received chemotherapy in their treatment course. Adjuvant chemotherapy (anthracycline and taxane based) was given in 67.9% and 7.8% received palliative chemotherapy as (Xeloda, Gemzar, etc..). Chemotherapy omitted in 11.6% of patients due to poor general condition or old age or early stage patients who received hormonal treatment (Table 4). Regarding Herceptin administration, 250 (20.7%) of all patients who had Her2 overexpression, 221 patients received Herceptin (range 10-17 cycles). According to hormonal therapy, 78.8% of all cases received hormonal therapy while 21.2% did not and 67.4% of them received Aromatase inhibitors (AI) ± zoladex mainly in adjuvant setting (Table 5).

Role of radiotherapy: of all included patients, 91.9% received adjuvant radiation therapy either with conventional doses (5000 cGY/25 Fraction, 86 patients) or hypo fractionated doses (4240 cGY/16 Fraction, 725 patients or 4005 cGY/15 Fraction, 220 patients) (Table 6).

Survival status

By the end of the current study, 1143/1210 (94.5%) patients were alive. The mean OS was 184.8 months (95% CI, 158.4-210) “The median OS was not reached”. The 2-year OS rate was 95.9% and 5-year overall survival (OS) rate was 82.2% for all patients (Figure 2). The median DFS was 66 months (95% CI, 55.2-85.2).

Table 3. Molecular types

Molecular Type, n (%)	2019 N = 379	2020 N = 383	2021 N = 448	Overall N = 1,210[1]
Luminal A	82 (21.6%)	101 (26.4%)	99 (22.1%)	282 (23.3%)
Luminal B	177 (46.7%)	178 (46.5%)	231 (51.6%)	586 (48.4%)
Her2	40 (10.6%)	22 (5.7%)	35 (7.8%)	97 (8.0%)
Triple-ve	50 (13.2%)	50 (13.1%)	50 (11.2%)	150 (12.4%)
Unknown	30 (7.9%)	32 (8.4%)	33 (7.4%)	95 (7.9%)

[1]n (%), Chi-squared Test for Trend in Proportions: test statistics = 1.968, p-value = 0.161, Her2: human epidermal growth factor receptor 2.

Table 4. Type of chemotherapy

Type of chemotherapy	Years			
	2019 N = 379	2020 N = 383	2021 N = 448	Overall N = 1,210[1]
Neoadjuvant	34 (10.1%)	41 (12.2%)	55 (13.9%)	130 (12.1%)
Adjuvant	238(70.4%)	229(68.2%)	259(65.4%)	726 (67.9%)
Neoadju+Adju	41 (12.1%)	40 (11.9%)	50 (12.6%)	131 (12.2%)
Palliative	25 (7.4%)	26 (7.7%)	32 (8.1%)	83 (7.8%)

[1]n (%), Chi-squared Test for Trend in Proportions: test statistics = 2.113, p-value = 0.146.

Table 5. Hormonal therapy of the patients

Hormonal therapy type	Years			
	2019 N = 379	2020 N = 383	2021 N = 448	Overall N = 1,210[1]
Tamoxifen	32 (11.0%)	34 (11.0%)	37 (10.5%)	103 (10.8%)
Zoladex + Tam	76 (26.2%)	78 (25.2%)	54 (15.3%)	208 (21.8%)
AI	162 (55.9%)	175 (56.5%)	206 (58.2%)	543 (56.9%)
Zoladex + AI	20 (6.9%)	23 (7.4%)	57 (16.1%)	100 (10.5%)

[1]n (%), Chi-squared Test for Trend in Proportions: test statistic = 0.059, p-value = 0.808

Table 6. Radiation therapy and Boost of the patients

Characteristic	Years					
	2019 N = 379	2020 N = 383	2021 N = 448	Overall N = 1,210	Test Statistic	p-value
Aim of Radiotherapy, n (%)					2.9	0.090
Palliative	36 (10.2%)	27 (7.6%)	28 (6.8%)	91 (8.1%)		
Adjuvant	318 (89.8%)	328 (92.4%)	385 (93.2%)	1,031 (91.9%)		
Conventional	55 (17.3%)	20 (6.1%)	11 (2.9%)	86 (8.3%)	45.991	<0.001*[2]
Hypofractionated	263 (82.7%)	308 (93.9%)	374 (97.1%)	945 (91.7%)		
Radiotherapy boost, n (%)					4.635	0.031*[2]
Yes	140 (44.0%)	160 (48.8%)	201 (52.2%)	501 (48.6%)		
No	178 (56.0%)	168 (51.2%)	184 (47.8%)	530(51.4%)		

[1]n (%), [2]Chi-squared Test for Trend in Proportions, *significant at p<0.05.

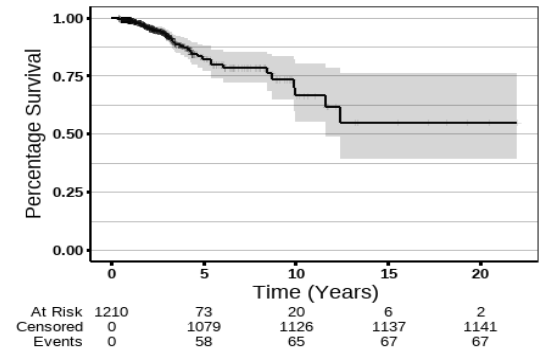

Figure 2. Overall survival of the patients

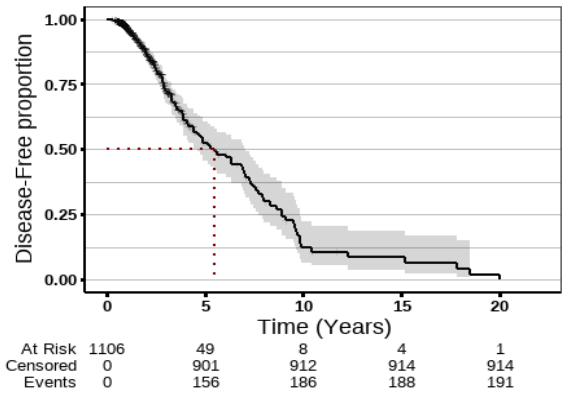

Figure 3. Disease-Free survival of the patients

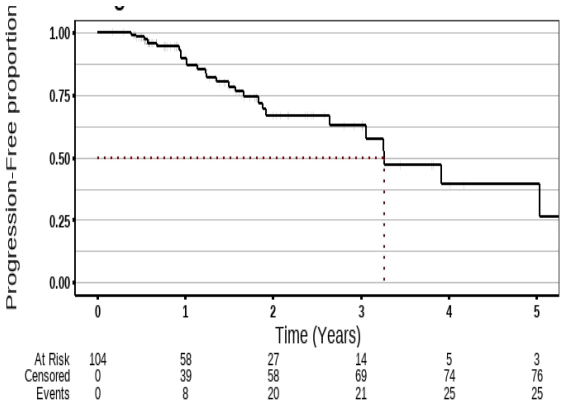

Figure 4. Progression- Free survival

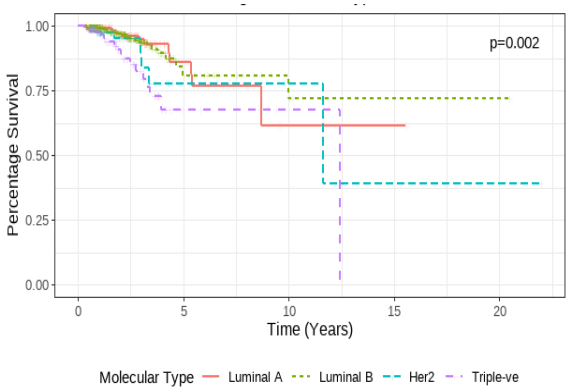

Figure 5. Overall survival according to molecular types of the tumors.

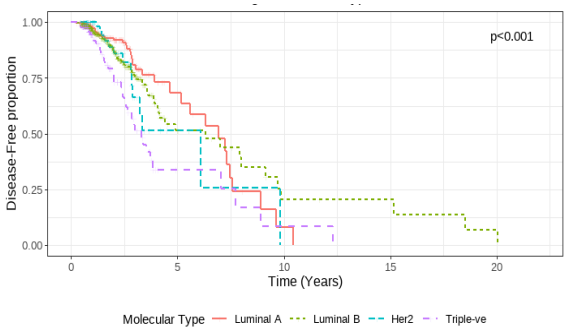

Figure 6. Disease-free survival of the patients according to molecular types.

The 2-year DFS rate was 86.7% & 5-year DFS rate was 52.6% for all patients (Figure 3). The median PFS was 39.6 months (95% CI, 31.2-60). The 2-year PFS was 66.8% (Figure 4). Overall survival according to molecular types, patients with triple negative had the worst prognosis. The 2-year OS was 91% for triple -ve, 95% for HER2 and 97% for luminal A & B (Figure 5). Disease free survival according to molecular types, patients with HER2 had the worst prognosis. The 2-year DFS was 73% for Triple -v, 86% for HER2, 87% for luminal B and 92% for luminal A (Figure 6).

DISCUSSION

This retrospective clinic-epidemiological study of breast cancer found that the median age of our patients was 53.4 years ranging between 24 -90 years. Postmenopausal patients represented 63% and male patients represented 1.6% of all cases. In the United States, a retrospective analysis of breast cancer patients diagnosed from 2015 to 2019 revealed that the median age at diagnosis was 62 years. Postmenopausal patients represented about 66.6% and male breast cancer represented less than 1% (ACS, 2022). In Chosun university Hospital-Korea (retrospective analysis of 401 patients with stage I-III breast cancer from 1998 to Dec 2013), the median age was 52 years (Jang et al., 2020). In the EMERGE study in Greece (a multicenter, retrospective cohort study involving 365 adult MBC (metastatic breast cancer) patients conducted between January 2010 and June 2012) 77.6% of patients were postmenopausal (Kotsakis et al., 2019). Worldwide, approximately 46% of breast cancer cases diagnosed in 2018 were premenopausal and 54% were postmenopausal (Heer et al., 2020).

In the present study, 10.7% of participants had a positive family history of breast cancer, while 12.2% reported a positive family history of other malignancies, which is comparatively lower than findings from other studies. In DeGennaro et al., (2018) study, 22% of patients had positive family history and Sofi et al. (2019) indicated that 15% of the patients had a positive family history of breast cancer.

Left-sided breast cancer accounted for 50.1% of cases, followed by right-sided cases at 48.8%, with bilateral occurrences representing 1.2% and according to site 66.6% of patients had the tumor in supra-areolar region, 14.1% were retro-areolar and 12.4% were infra-areolar and this finding aligns with the results of another research. In Zeeneldin et al. (2013), it was observed that 53.6% of cases were left-sided while 46.4% were right-sided and according to site 56.5% were supra-areolar, 11.1% were infra-areolar and 14.4% were retro-areolar. Kotsakis et al. (2019) reported that 50.3% of the patients were diagnosed with left-sided breast cancer, 47.6% with right-sided breast cancer and 2.1% were presented with bilateral breast cancer.

Invasive ductal carcinoma was the most predominant pathological subtype; constituting 88% of the patient population followed by ILC 4.9% then mixed type 4%. Rare pathologies (mucinous, papillary, medullary, adenocarcinoma, phyllodes, undifferentiated) represented 1.3% which match with Ibrahim et al., (2022) study (274 surgical specimens between 2008 &2010 in Mansoura university) IDC represented 83.2%, ILC 9.1%. Regarding stage of our patients, stage II represented 43%, stage III represented 37%, stage IV represented 8.8% and stage I represented 9%. While in Sofia et al., (2019) study, 47% were stage II, 36% were stage III, 14% were stage I and 3% stage IV. In our study, bone metastasis was the most prevalent, accounting for 51%, followed by 33% of patients exhibiting both bone and visceral metastases, and 16% presenting with solely visceral metastasis among all de-novo metastatic patients. In contrast, DeGennaro et al. (2018) reported that 28.4% of patients were classified as de-novo metastatic, a statistic possibly linked to delays in seeking medical consultation. Additionally, Wang et al. (2019) indicated that 39.8% had bone metastases, 19.79% had visceral metastases (including lung, liver, and brain), while 40.41% presented with both forms. In our study, 71.7% of cases were categorized as luminal (with 23.3% as luminal A and 48.4% as luminal B), followed by 12.4% classified as triple-negative cases, 8% as HER2 enriched, and 7.9% as unknown cases. Conversely, Ibrahim et al. (2022) reported that 55.1% of cases were luminal (41.2% and 13.9% for luminal A and B, respectively), with 28.5% diagnosed as TNBC and 19.4% as HER2 enriched. Yekedüz et al. (2022) documented that 59.6% were luminal, 18% were HER2 enriched, 13% were TNBC, and 9.4% were categorized as missing.

In our study, 92.3% underwent surgical procedures, modified radical mastectomy was done in 48.4% of our cases and BCS in 43.9%. In Kim et al., (2022) study, MRM was done in 42% of cases and BCS in 58%. Adjuvant chemotherapy was given in 67.9% of our patients while 12.2% received neoadjuvant & adjuvant and 12.1% received neoadjuvant chemotherapy due to high percentage of locally advanced disease. In Yekedüz et al., (2022) study, adjuvant chemotherapy was given in 85.6%, 11.7% did not receive chemotherapy and 2.7% were missing and in Kim et al., (2022) study 7.4% of patients received neoadjuvant chemotherapy. In current study, Herceptin was administered in 18.3% of patients (with 88.4% of HER2 positive cases receiving treatment), this potentially influenced by financial issues, contrasting with the 8.7% documented in the study by Kim et al. (2022) and 10.1% in the study by Yekedüz et al. (2022). Hormonal treatment was offered in 78.8% of our cases. The patients received hormonal treatment represented 67.8% and 68.6% in the studies of (Kim et al., 2022 and Yekedüz et al., 2022) respectively. In our study, 85.2% received adjuvant radiotherapy versus 47.5%, 66.1% & 30.4% received RT in the studies of (DeGennaro et al., 2018, Yekedüz et al., 2022; Kim et al., 2022) respectively. Variability may be due to different tumor stages and age of patients.

As regards the survival outcome, the 2-year OS rate was 95.9% and 5-year OS rate was 82.2%. The 2-year DFS rate was 96.8% & 5-year DFS rate was 82% for all patients. The 2-year PFS was

66.8%. From non-metastatic patients, 19.7% developed metastasis whether solitary or multiple and bone was the most common site of metastasis followed by lung. Comparable with Pruessmann et al., (2021) study, 5-year overall survival was 95.5% and disease-free survival was 85.2%. According to the findings of El Saghir et al. (2023), the disease-free survival rate at five years was recorded at 72.5%, decreasing to 55.9% at the ten-year mark, while the overall survival rates were noted to be 89.4% at five years and 76% at ten years.

In the study conducted by Chen et al. (2024), breast cancer recurrence was observed in 86 patients (15.4%), with 10 developing local recurrence, 10 exhibiting regional recurrence, 17 developing contralateral breast cancer, 29 presenting with distant metastases, 10 diagnosed with second primary cancers, and 10 died.

CONCLUSION

Awareness about breast cancer and risk factors has increased over the years. Breast cancer is a heterogenous disease, and the treatment differs according to molecular type and stage. Early stage breast cancer had better survival than late stage. Luminal cases had better survival than triple negative and HER2 positive cases.

CONFLICT OF INTEREST

The authors declare no conflict of interest.

FUNDING DETAILS

The study is self-funded.

PATIENTS' CONSENT

All patients signed informed consent.

DATA AVAILABILITY

All data underlying the results are available as part of the article and no additional source data is required.

LIMITATION OF STUDY

It is a retrospective study. Not all data was available in files. Some patients lost follow up and connection with them was not available.

RECOMMENDATION

The establishment of a comprehensive registry of cases and their data will facilitate a deeper understanding of the disease burden within our region, thereby enabling more precise identification of the problem and the formulation of optimal solutions.

Co-ordination between oncology, pathology, diagnostic radiology and surgical departments to facilitate the process of registration and follow up of cases is needed.

AUTHORS' CONTRIBUTION

All authors contributed to the study conception, design, data analysis and interpretation, critical revision of the article and final approval of the version to be published.

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REFERENCES

Alkabban FM, Ferguson T. (2019). Cancer breast. Michigan State University.

American Cancer Society. (2022). Breast Cancer Facts & Figures 2022–2024. American Cancer Society, Inc.; Atlanta, GA, USA. [(accessed on 21 October 2023)]. Available online: https://www.cancer.org/content/dam/cancer-org/research/cancer-facts-and-statistics/breast-cancer-facts-and-figures/2022-2024-breast-cancer-fact-figures-acs.pdf

Chen CC, Tang WH, Wu CC, Lee TL, Tsai IT, Hsuan CF, et al. (2024). Pretreatment Circulating Albumin, Platelet, and RDW-SD Associated with Worse Disease-Free Survival in Patients with Breast Cancer. Breast Cancer; 23-39.

DeGennaro V, Jiwani F, Patberg E, Gibbs M, Libby R, Gabriel D, et al. (2018). Epidemiological, clinical, and histopathological features of breast cancer in Haiti. J Glob Oncol; 4:1-9.

El Saghir NS, Khalil LE, El Dick J, Atwani RW, Safi N, Charafeddine M, et al. (2023). Improved survival of young patients with breast cancer 40 years and younger at diagnosis. JCO Glob Oncol; 9:1-7.

Ferlay J, Ervik M, Lam F, Laversanne M, Colombet M, Mery L, et al. (2024). Global Cancer Observatory: Cancer Today (version 1.1). Lyon, France: International Agency for Research on Cancer.

Available from: https://gco. iarc. who. int/today, accessed [DD Month YYYY].[Google Scholar

Harbeck N, Penault-Llorca F, Cortes J, Gnant M, Houssami N, Poortmans P, et al. (2019). Breast cancer. Nat Rev Dis Primers; 5(1):66.

Heer E, Harper A, Escandor N, Sung H, McCormack V, Fidler-Benaoudia MM. (2020). Global burden and trends in premenopausal and postmenopausal breast cancer: a population-based study. Lancet Glob Health; 8(8): e1027-e1037.

Howlader NNA, Krapcho M. (2018). SEER Fast Stats, 1975-2014. Stage Distrib; 2005–2014.

Ibrahim AH, Shash E. (2022). General oncology care in Egypt. In: Cancer in the Arab world. Singapore: Springer Singapore; pp. 41-61.

Jang SU, Kim YS, Kim KC. (2020). Survival Outcomes in Patients with Breast Cancer: Low Volume Single Center Study. J Breast Dis; 8(1):73-77.

Johnson KS, Conant EF, Soo MS. (2021). Molecular Subtypes of Breast Cancer: A Review for Breast Radiologists. J Breast Imaging; 3(1):12-24.

Kim H, Lee SB, Kim J, Chung IY, Kim HJ, Ko BS, et al. (2022). Improvement of survival in Korean breast cancer patients over a 14-year period: A large-scale single-center study. Plos One; 17(3):1-14.

Kotsakis A, Ardavanis A, Koumakis G, Samantas E, Psyrri A, Papadimitriou C. (2019). Epidemiological characteristics, clinical outcomes and management patterns of metastatic breast cancer patients in routine clinical care settings of Greece: Results from the EMERGE multicenter retrospective chart review study. BMC Cancer; 19:1-13.

Pruessmann J, Pursche T, Hammersen F, Katalinic A, Fischer D, Waldmann A. (2021). Conditional Disease-Free and Overall Survival of 1,858 Young Women with Non-Metastatic Breast Cancer and with Participation in a Post-Therapeutic Rehab Programme according to Clinical Subtypes. Breast Care; 16(2):163-172.

Sofi NY, Jain M, Kapil U, Yadav CP. (2019). Epidemiological characteristics of breast cancer patients attending a tertiary health-care institute in the National Capital Territory of India. J Cancer Res Ther; 15(5):1087-1091.

Wang R, Zhu Y, Liu X, Liao X, He J, Niu L. (2019). The Clinicopathological features and survival outcomes of patients with different metastatic sites in stage IV breast cancer. BMC Cancer; 19:1-12.

Yekedüz E, Dizdar Ö, Kertmen N, Aksoy S. (2022). Comparison of clinical and pathological factors affecting early and late recurrences in patients with operable breast cancer. J Clin Med; 11(9):1-11.

Zeeneldin AA, Ramadan M, Elmashad N, Fakhr I, Diaa A, Mosaad E. (2013). Breast cancer laterality among Egyptian patients and its association with treatments and survival. J Egypt Natl Canc Inst; 25(4):199-207.

Zendehdel. (2018). Subtypes of Benign Breast Disease as a Risk Factor for Breast Cancer: A Systematic Review and Meta-Analysis Protocol. Iran J Med Sci; 43(1):1–8.