COMMENTARY

Characteristics and prognosis of male breast cancer in Brazil: A cohort study

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Male breast cancer (MBC) is an uncommon disease. In Brazil, in the 2000s, 1.38% of all breast cancer (BC) diagnoses and 0.97% of BC deaths were in men.[1] Despite the important biological differences between female and MBC, survival rates were not different between sexes.[2,3] The understanding of the disease is still insufficient, and MBC can be considered a neglected disease.[4]

The aim of this study was to describe the experience of the Brazilian National Cancer Institute (INCA) concerning the biomarker expression of estrogen (ER), progesterone (PR), and human epidermal growth factor receptor-type 2 (HER2) receptors and Ki67 characteristics in MBC.

A total of 65 MBC diagnosed between 1999 and 2013 were enrolled into this retrospective cohort study. Tumor samples were reviewed, and immunohistochemistry analyses were performed blinded to the clinical data. This study was approved by the Institutional Ethics in Human Research Committee.

The main patient characteristics and overall survival (OS) are shown in Table 1 and Figure 1. No triple-negative cases were detected. Mean follow-up was 6 years (range 3 months-15 years).

In studies performed abroad, the 5-year OS of patients with MBC range from 70.6%[5] to 79.1%.[6] These values are much higher than those observed in the present study (55.8%). At the other extreme, a study in Burkina Faso, Africa, showed a 5-year OS of 49%.[7]

In this study, advanced clinical stage at diagnosis, negative PR and/or negative ER and receiving no oncological treatment were independently associated with OS (Table 2). Similarly, Leone et al[5] found that advanced clinical stage, histological grades III or IV, no treatment with surgery or radiotherapy, and ER-negative tumors

TABLE 1 Descriptive characteristics and overall survival of patients with male breast cancer

Variables	N (%ᵃ)	5-y survival % (±SD)	Median survival Years (95% CI)	*P*-value
Time period				.795
1999-2003	21 (32.3)	45.0 (11.7)	4.8 (2.0-7.6)	
2004-2008	28 (43.1)	52.6 (9.6)	6.8 (0.2-13.3)	
2009-2013	16 (24.6)	73.7 (11.3)	6.8 (4.4-9.2)	
Age at diagnosis				.262
≥65 y	29 (44.6)	49.4 (±10.0)	4.0 (1.8-8.0)	
<65 y	36 (55.4)	60.3 (±8.3)	8.6 (4.4-12.8)	
BMI				.186
<25	18 (41.9)	59.3 (±11.9)	6.2 (3.2-9.1)	
≥25	25 (58.1)	72.0 (±9.0)	10.1 (7.8-12.3)	

TABLE 1 (Continued)

Variables	N (%ᵃ)	5-y survival % (±SD)	Median survival Years (95% CI)	P-value
Race/ethnicity				.945
White	34 (61.8)	63.2 (±8.5)	8.6 (6.6-10.7)	
Nonwhite	21 (38.2)	59.4 (±11.2)	6.2 (0.6-11.8)	
Histology				.220
Invasive ductal carcinoma	56 (86.2)	52.1 (±7.0)	6.1 (1.6-10.7)	
Othersᵇ	9 (13.8)	77.8 (±13.9)	6.8 (NA)	
Nuclear grade				.711
III	19 (36.5)	56.1 (±11.7)	6.2 (3.3-9.1)	
I/II	33 (63.5)	57.2 (±9.0)	8.6 (3.4-13.8)	
Extent of the tumor				.190
T0/T1	11 (20.4)	72.7 (±13.4)	11.8 (6.8-16.7)	
T2	20 (37.0)	52.9 (±11.4)	6.1 (3.1-9.1)	
T3	5 (9.3)	80.0 (±17.9)	10.1 (3.5-16.6)	
T4	18 (33.3)	39.7 (±12.3)	4.2 (1.7-6.7)	
Lymph nodal involvement				.002
N0	22 (36.7)	81.1 (±8.5)	11.8 (8.2-15.5)	
N1	33 (55.0)	41.1 (±9.0)	4.6 (2.3-6.8)	
N2	5 (8.3)	40.0 (±21.9)	4.1 (0-10.6)	
Metastases				.002
M0	52 (82.5)	63.7 (±6.8)	8.4 (5.1-11.8)	
M1	11 (17.5)	21.2 (±13.2)	3.8 (0-7.7)	
Clinical stage				<.001
Advanced (≥2B)	44 (68.8)	44.8 (±7.8)	4.2 (3.0-5.4)	
Initial (<2B)	20 (31.3)	78.9 (±9.4)	Not Reached	
Estrogen receptor				0.604
Negative(<1%)	2 (3.1)	100	Not Reached	
Positive (≥1%)	63 (96.9)	54.3 (±6.5)	6.8 (2.8-10.7)	
Progesterone receptor				.068
Negative(<1%)	7 (10.8)	28.6 (±17.1)	3.0 (2.6-3.3)	
Positive (≥1%)	58 (89.2)	59.5 (±6.7)	8.4 (5.5-11.3)	
Estrogen or progesterone receptor				.065
One or both negative	9 (13.8)	44.4 (±16.6)	3.4 (2.2-4.7)	
Both positive	56 (86.2)	57.9 (6.9)	8.6 (5.1-12.1)	
HER2				.248
Negative	55 (84.6)	58.7 (±6.9)	8.0 (5.2-10.8)	
Positive	10 (15.4)	40.0 (±15.5)	2.2 (0.2-4.2)	
Ki67				.419
Negative (<14%)	63 (96.9)	56.0 (±6.5)	6.8 (3.0-10.5)	
Positive (≥14%)	2 (3.1)	50.0 (±35.4)	0.9 (NA)	
Surgery				<.001
Yes	51 (78.5)	68.3 (±6.8)	9.4 (7.0-11.8)	
No	14 (21.5)	08.9 (±8.4)	1.1 (0.6-1.6)	

TABLE 1 (Continued)

Variables	N (%[a])	5-y survival % (±SD)	Median survival Years (95% CI)	P-value
Axillary approach[c]				.798
Yes	49 (96.1)	69.2 (±6.9)	9.4 (7.3-11.5)	
No	2 (3.9)	50.0 (±35.4)	4.2 (NA)	
Lymph node status				.986
Positive	29 (60.4)	70.8 (±8.7)	8.6 (6.0-11.3)	
Negative	19 (39.6)	70.6 (±11.1)	10.1 (5.4-14.7)	
Any oncological treatment				<.001
Yes[d]	54 (83.1)	66.4 (±6.7)	8.6 (6.3-11.0)	
No	11 (16.9)	0	1.3 (0-2.6)	
Chemotherapy				.003
Yes	33 (50.8)	77.6 (±7.5)	10.1 (7.0-13.1)	
No	32 (49.2)	32.4 (±8.8)	4.1 (2.3-5.9)	
Radiotherapy				.465
Yes	24 (36.9)	68.5 (±9.9)	6.8 (4.2-9.3)	
No	41 (63.1)	48.4 (±8.1)	4.9 (0-10.6)	
Hormonal therapy				.006
No	28 (43.1)	33.6 (±9.5)	4.0 (2.4-5.5)	
Yes	37 (56.9)	71.7 (±7.6)	9.8 (6.7-13.0)	
Total	65 (100.0)	55.8 (6.4)	6.8 (2.9-10.6)	---

Abbreviations: BMI, body mass index; HER2, human epidermal growth factor receptor 2; NA, not available; SD, standard deviation.

[a]Percentages were calculated based on valid data.

[b]Papillary carcinoma = 5 (7.7%); Ductal carcinoma in situ = 2 (3.1%); Adenoid cystic carcinoma = 1 (1.5%); Mucinous carcinoma = 1 (1.5%).

[c]Only surgical patients (n = 51): Sentinel lymph node biopsy/lymphadenectomy

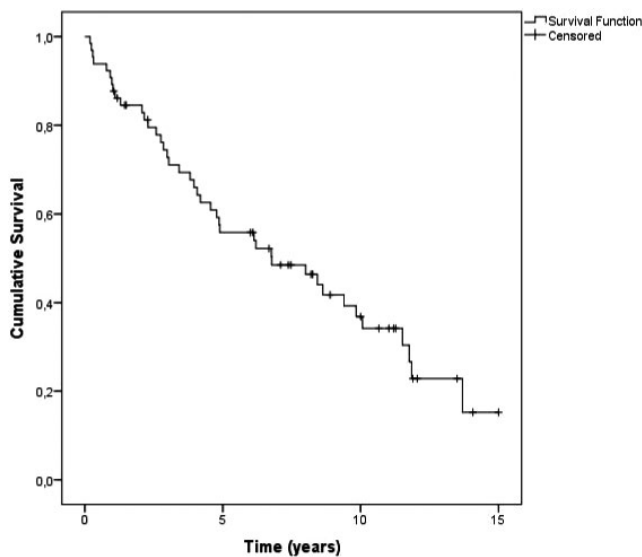[d]Surgery, Chemotherapy, Radiotherapy or Hormonal therapy.

FIGURE 1 Overall survival of patients with male breast cancer

have a significant lower OS. Another study[8] established that only hormone negative receptors (ER, PR, and androgen receptor) have

TABLE 2 Independent factors associated with overall survival in patients with male breast cancer

Variables	[a]HR[a]	95% CI	P-value
No oncological treatment	8.9	3.4-22.9	<.001
Clinical stage ≥ 2B	3.1	1.2-7.7	.015
Negative progesterone or estrogen receptor	2.7	1.1-6.5	.024

Abbreviations: CI, Confidence interval; [a]HR, Adjusted hazard ratio.

[a]Adjusted by age (continuous).

influenced negative survival of MBC. In contrast, age[6] has no prognostic hole in the present cohort.

Efforts to improve the prognosis of patients with MBC should be geared toward achieving early diagnosis, assessing hormone receptor status, and offering an individualized treatment.

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