TREATMENT PATTERNS OF TRIPLE NEGATIVE BREAST CANCER IN BRAZILIAN PRIVATE HEALTHCARE SETTING: A CLAIM DATABASE

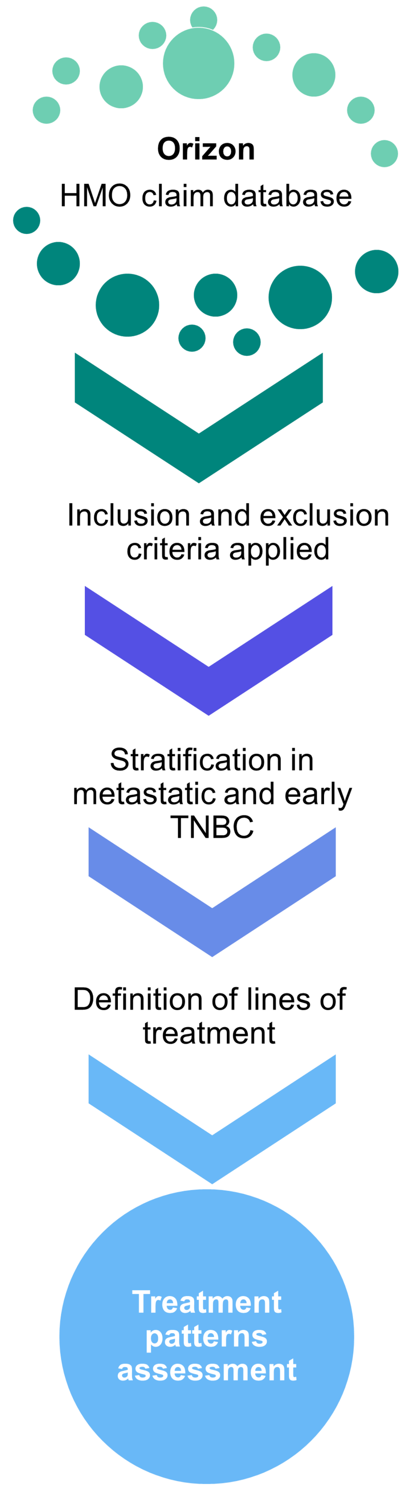
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BACKGROUND & OBJECTIVE

- Breast cancer (BC) is the leading cause of death in women around the world [1]. The triple negative breast cancer (TNBC) subtype accounts for 15.6% to 21% of all breast cancer in Brazil1-3 , and presents a key unmet medical need, due to worst prognosis, higher rates of relapse and mortality [2-4].
- Currently, there is no data on the treatment patterns of TNBC in Brazilian private health sector, impairing the development of accurate pharmacoeconomic models, policy planning, and budget allocation for breast cancer (BC) management.
- The aim of the study was to describe real-world data on the treatment patterns of Brazilian TNBC patients treated in the private healthcare setting.

METHODS


Orizon
HMO claim database
Inclusion and exclusion criteria applied
Stratification in metastatic and early TNBC
Definition of lines of treatment
Treatment patterns assessment

INCLUSION & EXCLUSION CRITERIA

- > 18 years old at index date*
- At least one BC claim (ICD-10 C50) + at least one claim of systemic therapy for BC
- First claim reported between January 2012 – December 2017
- Excluded: patients with HER-2 and HR targeted therapies reported during this period

*considered as the date of the first ICD-10 C50 claim reported

EARLY AND METASTATIC DEFINITION

- Patients were grouped as having metastatic (mTNBC—stage IV) or early (eTNBC—stages I-III) disease.
- Patients with ≥ 2 claims of metastatic disease (ICD-10: C76 to C80, except for C77.3) or any treatment and/or procedure aimed at metastatic disease management with at least 15 days apart, reported between 1 month prior and 6 months after the index date were considered as mTNBC

LINES OF TREATMENT

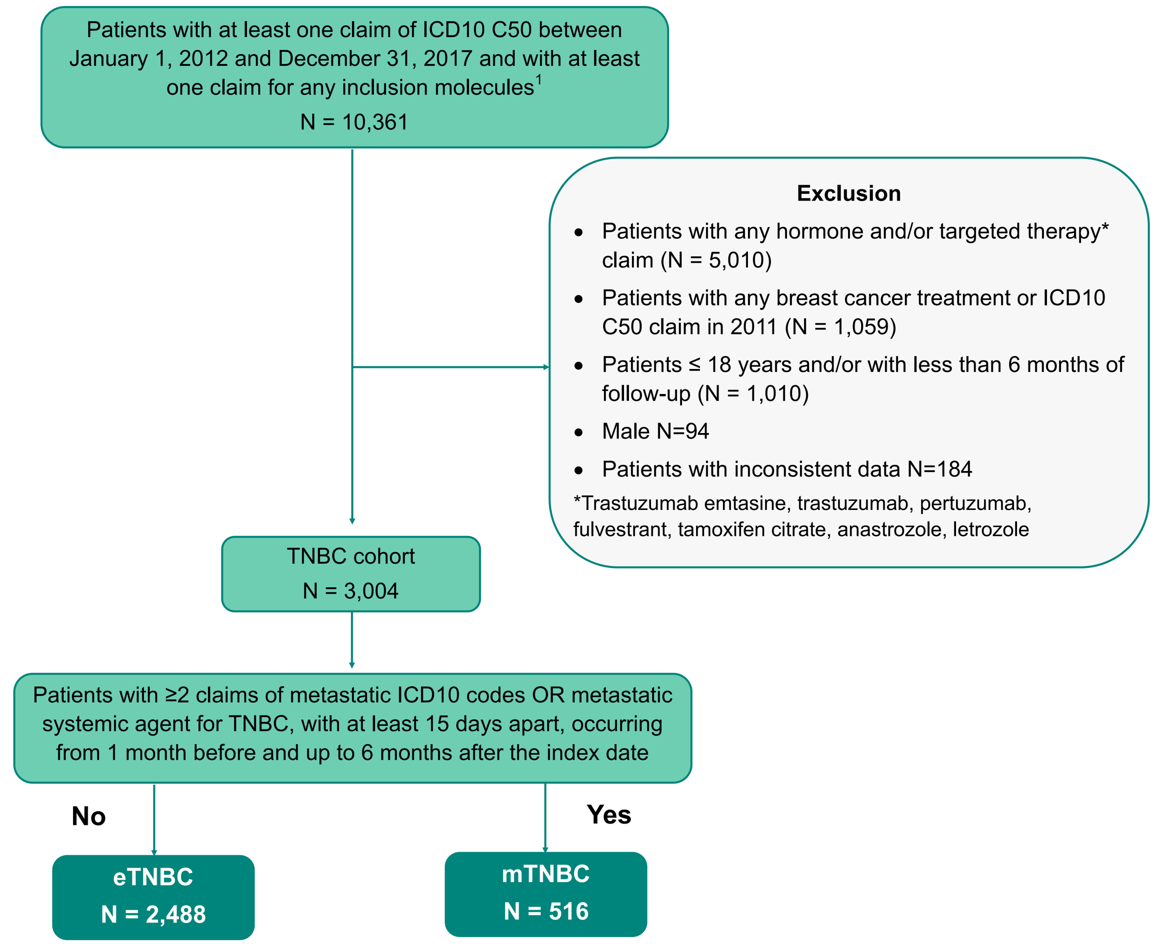
Treatment switch: considered when claim of a different drug/ regimen was reported after 60 days or more, or when a drug claim was reported after an interval of at least 120 days.

For eTNBC: if a new drug was identified within a window of 45 days it was considered as a sequential treatment. If a subsequent regimen was identified, it was considered as a treatment for progressive disease, thus the term used forward was LOT

- Data from 2012 until 2017 were assessed
- The treatment pattern was described and summarized as frequency. Treatment duration was presented as mean (SD) and calculated as the total number of months since the first treatment initiation (first treatment claim) and the end of the respective treatment (considered as the last treatment claim).

RESULTS

Figure 1. Patient selection


Patients with at least one claim of ICD10 C50 between January 1, 2012 and December 31, 2017 and with at least one claim for any inclusion molecules[1]
N = 10,361
Exclusion
Patients with any hormone and/or targeted therapy* claim (N = 5,010)
Patients with any breast cancer treatment or ICD10 C50 claim in 2011 (N = 1,059)
Patients ≤ 18 years and/or with less than 6 months of follow-up (N = 1,010)
Male N=94
Patients with inconsistent data N=184
*Trastuzumab emtasine, trastuzumab, pertuzumab, fulvestrant, tamoxifen citrate, anastrozole, letrozole
TNBC cohort
N = 3,004
Patients with ≥2 claims of metastatic ICD10 codes OR metastatic systemic agent for TNBC, with at least 15 days apart, occurring from 1 month before and up to 6 months after the index date
No
Yes
eTNBC
N = 2,488
mTNBC
N = 516

[1]gemcitabine, irinotecan, irinotecan hydrochloride, gemcitabine hydrochloride, vinorelbine ditartrate, oxaliplatin, vinorelbine tartrate, eribulin mesylate, cisplatin, capecitabine, paclitaxel, doxorubicin hydrochloride, docetaxel, carboplatin, bevacizumab, fluorouracil.

- The figure 1 depicts the patient selection flow and the number of eTNBC and mTNBC patients included in this study.
- mTNBC treatment patterns are illustrated in figure 2 where the progression rates and mean time of treatment shows that only a minority of TNBC patients reached LOT3 and decreasing time on treatment reflects acquired chemo-resistance associated with TNBC. Furthermore, in the figure 4 it is possible to observe that the choice of mTNBC is influenced by eTNBC treatment.
- The identification of a breast-related surgery was a key point to classify the therapy scheme prescribed, however, only 41.6% eTNBC patients had a documented surgery. Therefore, for treatment patterns assessment, we considered 1,034 eTNBC patients.
- eTNBC treatment pattern analysis showed that within the studied period, the adjuvant treatment (ACT) was the mainstay approach, accounting for 75% of the of treatment setting (Figure 3)
- For eTNBC patients that received neoadjuvant chemotherapy (NACT), 46,2% of them received anthracycline plus taxane chemotherapy (doxorubicin, cyclophosphamide, and paclitaxel/docetaxel) (Table 1; Figure 4A)
- In ACT group, most eTNBC patients received anthracycline based regimens following taxane based regimens (especially paclitaxel) as a sequential chemotherapy (Table 1; Figure 4B). Conversely, patients treated with adjuvant taxane based chemotherapy (docetaxel plus cyclophosphamide or docetaxel/paclitaxel alone) received anthracycline based (mainly doxorubicin plus cyclophosphamide) as a sequential chemotherapy.
- 4.4% of eTNBC patients presented a subsequent line of treatment after the adjuvant therapy, being considered as patients with a progressive disease.

Figure 2. mTNBC treatment patterns

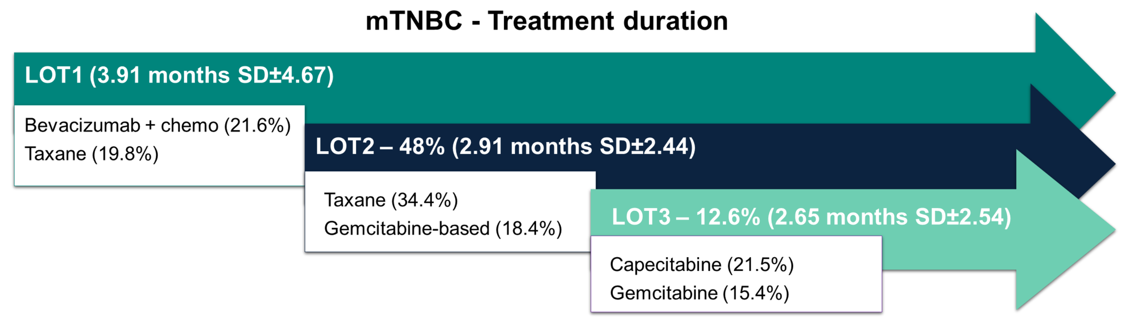

mTNBC - Treatment duration
LOT1 (3.91 months SD±4.67)
Bevacizumab + chemo (21.6%)
Taxane (19.8%)
LOT2 – 48% (2.91 months SD±2.44)
Taxane (34.4%)
Gemcitabine-based (18.4%)
LOT3 – 12.6% (2.65 months SD±2.54)
Capecitabine (21.5%)
Gemcitabine (15.4%)

Figure 3. eTNBC treatment patterns

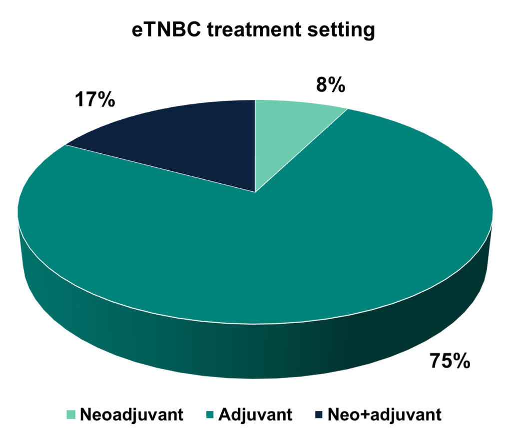


eTNBC treatment setting
17%
8%
75%
Neoadjuvant
Adjuvant
Neo+adjuvant

Table 1. eTNBC treatment patterns

Regimens	NACT n= 78	ACT: ACT n=779	ACT: Sequential n=446	NACT/ACT: NACT n=177	NACT/ACT: ACT n=177	NACT/ACT: Sequential n=23	Progressive disease n=45
n (%)							
Anthracycline-based	10 (12.8)	383 (49.2)	43 (9.6)	130 (73.4)	24 (13.6)	0 (0.0)	4 (8.9)
Taxane-based	25 (32.1)	248 (31.8)	350 (78.5)	24 (13.6)	123 (69.5)	4 (4.4)	4 (8.9)
Platinum-based	0 (0.0)	3 (0.4)	1 (0.2)	0 (0.0)	1 (0.6)	0 (0.0)	0 (0.0)
Taxane+platinum-based	4 (5.1)	13 (1.7)	6 (1.3)	10 (5.6)	12 (6.8)	2 (2.2)	2 (4.4)
Anthracycline+taxane-based	36 (46.2)	20 (2.6)	10 (2.2)	5 (2.8)	5 (2.8)	0 (0.0)	0 (0.0)
Bevacizumab-based	0 (0.0)	12 (1.5)	5 (1.1)	0 (0.0)	3 (1.7)	8 (8.8)	11 (24.4)
Capecitabine-based	0 (0.0)	10 (1.3)	5 (1.1)	0 (0.0)	2 (1.1)	4 (4.4)	9 (20.0)
Gemcitabine-based	1 (1.3)	17 (2.2)	15 (3.4)	3 (1.7)	1 (0.6)	3 (3.3)	9 (20.0)
Other	2 (2.6)	73 (9.4)	11 (2.5)	5 (2.8)	6 (3.4)	2 (2.2)	6 (13.3)

Early TNBC N=1,034

Figure 4. Sankey diagram (A) eTNBC neoadjuvant setting; (B) eTNBC adjuvant setting


A
NAT Anthracycline-based
NAT Gemcitabine-based
NAT Other
NAT Taxane-based
NAT Taxane+platinum-based
NAT Anthracycline+taxane-based
AT Taxane-based
AT Other
AT Bevacizumab-based
AT Platinum-based
AT Taxane+platinum-based
AT Anthracycline+taxane-based
AT Anthracycline-based
AT Gemcitabine-based
AT Capecitabine-based
Sequential Capecitabine-based
Sequential Gemcitabine-based
Sequential Taxane+platinum-based
Sequential Bevacizumab-based
Sequential Taxane-based
Sequential Other
Line 1 Taxane-based
Line 1 Bevacizumab-based
Line 1 Other
Line 1 Capecitabine-based
Line 1 Gemcitabine-based
Line 2 Other
B
AT Anthracycline-based
AT Anthracycline+taxane-based
AT Other
AT Taxane-based
AT Capecitabine-based
AT Bevacizumab-based
AT Taxane+platinum-based
AT Gemcitabine-based
Sequential Taxane-based
Sequential Taxane+platinum-based
Sequential Gemcitabine-based
Sequential Anthracycline-based
Sequential Other
Sequential Bevacizumab-based
Sequential Capecitabine-based
Sequential Platinum-based
Sequential Anthracycline+taxane-based
Line 1 Bevacizumab-based
Line 1 Taxane+platinum-based
Line 1 Gemcitabine-based
Line 1 Capecitabine-based
Line 1 Taxane-based
Line 1 Other
Line 1 Anthracycline-based
Line 2 Anthracycline-based
Line 2 Gemcitabine-based
Line 2 Other
Line 2 Bevacizumab-based
Line 2 Capecitabine-based
Line 2 Taxane-based
Line 3 Capecitabine-based
Line 3 Other
Line 3 Gemcitabine-based
Line 3 Anthracycline-based

LIMITATIONS

- Although the combination of the inclusion and exclusion molecules was aimed to identify the TNBC patients, the absence of clinical data prevented the confirmation of this classification.
- Censored data was not possible to address. Patients could withdraw from the database due to death, loss of HMO coverage, or end of treatment

CONCLUSION

- To our knowledge this was the first study to describe TNBC treatment patterns in Brazil private healthcare sector.
- The treatment of eTNBC was mainly based in AT with anthracycline and taxane, while in mTNBC bevacizumab, capecitabine and gemcitabine were often prescribed. Of interest, the estimated treatment duration observed was shorter in this real-world database than expected in pivotal trials, reflecting the poor prognosis of mTNBC and its unmet medical need.
- Treatment pattens may have changed after the study period, therefore, we cannot rule out that other chemotherapies are now in use. Although several studies indicate that the addition of platinum drugs to the neoadjuvant regimens could increase pathological complete response [5], few patients were treated with such drugs during the study period.

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