Poster FPNP5-05-25

Real-world Treatment for HER2-positive (HER2+) Metastatic Breast Cancer Patients and Compliance to Guideline Recommendations: HER2 REAL Brazil Cohort

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Objectives

Primary objective

- To understand the treatment patterns in patients with HER2+ u/mBC.

Secondary objectives

- To describe the demographic and clinicopathological characteristics of patients with HER2+ u/mBC.
- To describe the effectiveness, safety, and tolerability of different treatment regimens in patients with HER2+ u/mBC.

Conclusions

- This real-world analysis of HER2+ u/mBC in Brazil population showed that less than half of patients received the guideline-directed medical therapies. These suboptimal treatment patterns are likely to be be due to access barriers.
- The observed heterogenous pattern of treatment attrition rates across LOTs underscores the need to identify reasons for these discrepancies.
- Early implementation of more effective treatment is crucial, as not all patients survive to the next LOT due to disease progression or declining health.

Plain language summary

Why did we perform this research?
Human epidermal growth factor (HER2) is a protein found at higher-than-normal levels on the cell surface of some tumors. HER2+ mBC expresses higher-than-normal levels of the HER2 protein and has spread from its original site to other parts of the body (metastasis). The treatment landscape of HER2+ mBC is evolving with several novel drugs approved in recent years. In this study, we attempt to better understand the treatment patterns and survival outcomes in patients with HER2+ mBC in real-world routine care.

How did we perform this research?
Available data of patients diagnosed with HER2+ mBC were obtained from medical records or from patients themselves. The data were collected from the date of diagnosis of unresectable mBC (index) to the end of follow-up (i.e. until death, the last medical record entry, or date of data extraction, whichever was earlier). This study was conducted in Brazil region.

What were the findings of this research?
This real-world analysis showed that only a minority of patients received therapies recommended by guidelines for medical therapy for the disease. The treatment patterns were suboptimal, possibly due to barriers to accessing treatment in Brazil region.

What are the implications of this research?
Our findings indicate the need to identify possible limitations to improve standard of care practices and compliance to guideline recommended treatment in patients with HER2+ mBC in Brazil region.

Where can I access more information?
Clinicaltrials.gov (NCT04857619).

The materials listed are for example only and may be replaced with other materials

Poster | Plain language summary | Supplementary material | Narrated poster video

Please scan this quick response (QR) code with your smartphone camera or app to obtain a copy of these materials. Alternatively, please click on the link below.

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Introduction

- Breast cancer is the one of most common cancers in Brazil with an estimated 73,610 new cases reported in 2023 alone.[1]
- Approximately 20% of patients with BC have HER2+ BC, representing a biologically aggressive subtype affecting patient outcomes.[2-4]
- The advent of targeted therapies such as trastuzumab (TRA) and pertuzumab (PTZ) over the past decade, has revolutionized treatment strategies, improving survival outcomes in this patient population.[5,6]
- Guidelines include TRA ± PTZ along with taxane chemotherapy (CT) as the standard of care (SOC) in first-line treatment for HER2+ mBC.[7]
- Despite advancements in treatment, regional variations in clinical practices may lead to inconsistencies in the application of SOC guidelines particularly in emerging markets such as Brazil.[8-10]
- Furthermore, Brazil presents unique healthcare challenges; with its vast and diverse population, Brazil's healthcare system encompasses both private and public sectors, each with varying levels of access to treatment and care.
- In Brazil, cancer registries are limited resulting in a lack of comprehensive information on sociodemographic, treatment patterns, and outcomes in patients with HER2+ BC.[11,12] Thus, assessing treatment patterns and outcomes is crucial to identify disparities, optimize treatment strategies, and improve patient outcomes across the country.
- This HER2 REAL study was conducted in Australia, Brazil, Hong Kong, Republic of Korea, Singapore, and Taiwan to understand the clinicodemographic profile, treatment patterns, and survival outcomes in HER2+ u/mBC patients in routine clinical practice.
- Here, we present the results from the Brazil cohort.

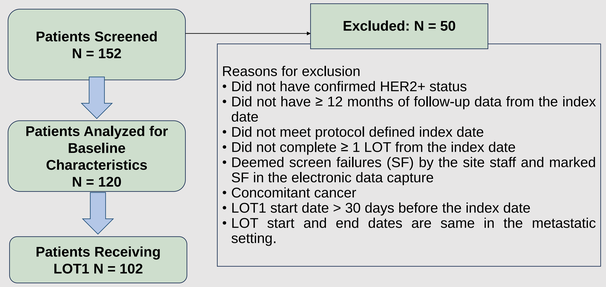
Methods

Inclusion criteria

- Adult patients (≥ 18 years) diagnosed with HER2+ u/mBC since the availability of trastuzumab emtansine (T-DM1) or January 2017, whichever was earlier
- Patients with u/mBC diagnosed between January 2017 and December 2019 and already progressed on 2 prior lines of treatments during study enrollment
- Patients who provided informed consent or for whom informed consent was obtained from their legal representatives
- Patients with ≥ 12 months of follow-up data from index date or follow-up data until death if occurred within first 12 months
- Patients who completed at least 1 line of therapy (LOT) for HER2+ u/mBC.

Exclusion criteria

- HER2-negative u/mBC
- Changed HER2 status from positive to negative at the progression from early-stage to advanced-stage disease
- Concomitant cancer at the time of diagnosis of HER2+ u/mBC except for the non-metastatic non-melanoma skin cancers, or *in situ* benign neoplasms
- Participated in an interventional study that remained blinded at the time of enrollment.



Statistical analysis:

- The data analysis involved descriptive statistics for clinicodemographic characteristics.
- Categorical variables were presented as frequencies and percentages.
- Continuous variables were presented as mean (SD) or median (range).

Missing values are not presented to retain consistency with the abstract.

Results and Interpretation

Table 1: Demographic and clinical characteristics

Characteristics at index date*	Brazil (N = 120)
Age (years), median (range)	53 (25-85)
Family history of BC, n (%)	
Yes	24 (27.9)
No	62 (72.1)
Follow-up duration, months, median (range)	31.7 (1-167)
Time from Initial BC diagnosis to the index date (months) median (range)	18 (0-424)
< 2 years	54 (56.3)
2-5 years	24 (25.0)
> 5 years	18 (18.8)
Site of metastasis†, n (%)	
Visceral	62 (62.0)
Visceral only	28/62 (45.2)
Non-visceral	60 (60.0)
Non-visceral only	28/60 (46.7)
CNS	20 (20.0)
CNS only	7/20 (35.0)
Pathological stage, n (%)	
Stage III	1 (1.0)
Stage IV	94 (99.0)
Estrogen receptor status, n (%)	
Positive	23 (65.7)
Negative	12 (34.3)
Progesterone receptor status, n (%)	
Positive	12 (34.3)
Negative	23 (65.7)

*Missing /unavailable data not presented.
†Site of metastasis for "visceral only" category contains only patients with metastasis in this location, while "visceral" includes both these patients, as well as those with visceral + any other location. Corresponding logic applies to the "non-visceral" and "CNS" categories. Non-visceral metastases include tumors located in the bone, bone marrow, lymph nodes, skin, and soft tissues. CNS metastases include tumors located in the brain, spinal cord, or meninges. All other locations are classified as visceral disease.

BC, Breast cancer; CNS, Central nervous system; n, number of patients in the treatment.

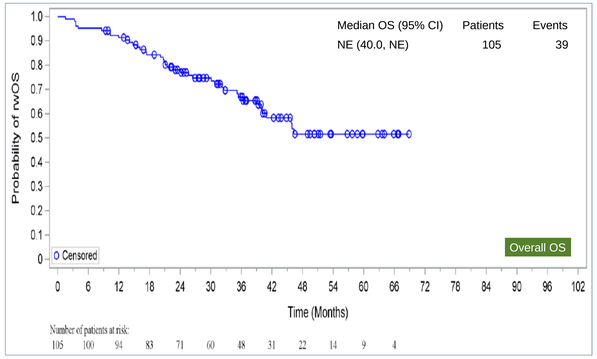
Table 2: Treatment patterns and survival for the top regimens by LOT

Regimen	Brazil (N = 120)
LOT1 (N1 [%])*	**102 (85.0)**
Median duration (months)	7.9 (0–54)
Regimen 1	**TRA + PTZ + CT**
n/N1 (%)	40 (39.2)
Regimen 2	**TRA + CT**
n/N1 (%)	37 (36.3)
LOT2 (N1 [%])	**79 (65.8)**
Median duration (months)	10.3 (0–47)
Regimen 1	**T-DM1**
n/N1 (%)	15 (19.0)
Regimen 2	**TRA + CT**
n/N1 (%)	14 (17.7)
TRA + PTZ + CT (LOT1) followed by T-DM1 (LOT2)	12 (10)
TRA + PTZ + CT (LOT1) followed by non-T-DM1 (LOT2)	21 (17.5)
Non-(TRA + PTZ + CT) (LOT1) followed by T-DM1 (LOT2)	3 (0.3)
Non-(TRA + PTZ + CT) (LOT1) followed by non-T-DM1 (LOT2)	40 (33.3)
LOT3 (N1 [%])	**35 (29.2)**
Median duration (months)	5.3 (1–12)

*14 eligible patients were excluded because their LOT1 start date was > 30 days before the index date
2 patients are excluded from the analysis since index date is prior to 1 Jan 2017.
2 patients are excluded from the analysis since the LOT start and end dates are same in the metastatic setting.

CT, chemotherapy; LOT, line of therapy; m, metastatic; N, the total number of patients; n, number of patients in the treatment; PTZ, pertuzumab; T-DM1, trastuzumab emtansine; TRA, trastuzumab.

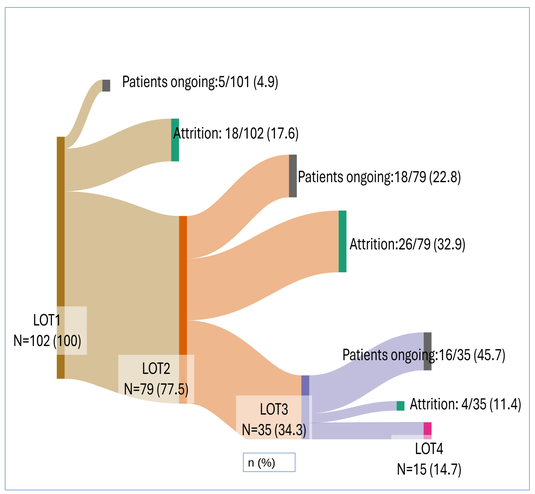
Figure 1: KM Curve for rwOS



rwOS is the length of time from the index date or date of initiation of LOT to date of death due to any cause.
An event was said to have occurred when a patient reported death after diagnosis. If a patient was not reported as dead, the patient was censored at last contact date.
Reasons for censoring: For each LOT, an event is said to have occurred when a patient reported disease progression or death within the corresponding LOT. If a patient did not report disease progression or death until the end of the respective LOT, then the patient was censored at therapy end date. If therapy end date was missing and the LOT under consideration was the last LOT for the patient, then the patient was censored at last contact date. If therapy end date was missing and the LOT under consideration was not the last LOT for the patient, then the patient was censored at day prior to start date of next LOT.
The Kaplan-Meier analysis is performed only if more than 20 events are present in the data. KM curves for SOC in LOT 1 and LOT2 for OS and PFS are not available due to a limited number of events.

KM, Kaplan-Meier; LOT, line of therapy; m, metastatic; NE, not evaluable; rwOS, real-world overall-survival; PFS, progression free survival; SOC, standard of care.

Figure 2: Attrition rates for the first three LOTs



LOT, line of therapy; ; n, number of patients in the treatment.

Algorithm for calculating attrition rates:
Attrition rate for LOTn = Patients receiving LOTn – (Patients ongoing at LOTn + Patients receiving LOTn+1)

- A total of 120 patients with a median (range) age of 53 (25-85) years were analyzed; 99.2% (119/120) were females and 55.9% (52/93) were postmenopausal.
- Most patients (62.1%; 41/66) had moderately differentiated tumors with 90.4% (66/73) having ductal histology.
- Overall, median follow-up was 34.8 months; 2-years survival rate was 78.1%.
- Real-world mOS was not estimable for the top regimens in LOT1 or LOT2.
- The treatment attrition rates increased from LOT1 (17.6%) to LOT2 (32.9%).

Abbreviations

BC, Breast cancer; CNS, Central nervous system; CT, chemotherapy; HER2, human epidermal growth factor receptor 2; KM, Kaplan-Meier; LOT, line of therapy; m, metastatic; N, the total number of patients; n, number of patients in the treatment; NE, not evaluable; rwOS, real-world overall-survival; PFS, progression free survival; PTZ, pertuzumab; SD, standard deviation; SOC, standard of care; SF, screen failure; T-DM1, trastuzumab emtansine; TRA, trastuzumab.

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Disclosures

The authors have submitted their disclosures at the time of abstract submission.

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