Clinical outcomes and treatment attrition rates of HER2 positive metastatic breast cancer (MBC) patients at a tertiary referral cancer centre in London: the Guy's Cancer experience.

Haixi Yan[1,2*]; Maria Toki[1*]; Hartmut Kristeleit[1]

[1]Medical Oncology, Guy's and St Thomas' NHS Foundation Trust, London, United Kingdom, [2]Comprehensive Cancer Centre, King's College London, London, United Kingdom, *These authors contributed equally

Introduction

Treatment options for HER2-positive MBC are increasing and trastuzumab deruxtecan (T-DXd) is now used in earlier lines of treatment, having shown superiority to trastuzumab emtansine (T-DM1) in DESTINY-Breast03 and to THP in DESTINY-Breast09[1,2].

Uncertainty remains on the optimal sequencing of these drugs and their impact on OS with concerns raised regarding the generalisability of reported progression free survival (PFS) and treatment attrition rates in these trials.

In this series, we report treatment attrition rates and PFS for patients starting 1st line chemotherapy between 2019 and 2024 at Guy's Cancer Centre, London, United Kingdom.

Methods and Materials

Electronic health records were searched for patients with HER2-positive advanced breast cancer starting 1st line treatment between 01/01/19 and 31/12/24. Dates to calculate PFS and OS as well as attrition rates were extracted for each line of therapy.

	All patients (n – 143)
Age at diagnosis, years	
Median (IQR)	51.7 (42.7-65.6)
< 60	100 (70.4%)
≥ 60	42 (29.6%)
Sex	
Female	141 (98.6%)
Male	2 (1.4%)
Race	
White	72 (56.2%)
Black	30 (23.4%)
Asian	14 (10.9%)
Mixed/Other	12 (9.4%)
ECOG Performance Status	
0	45 (31.5%)
1	56 (39.2%)
≥ 2	42 (29.4%)

Table 1. Patient characteristics at diagnosis with metastatic disease.

Results

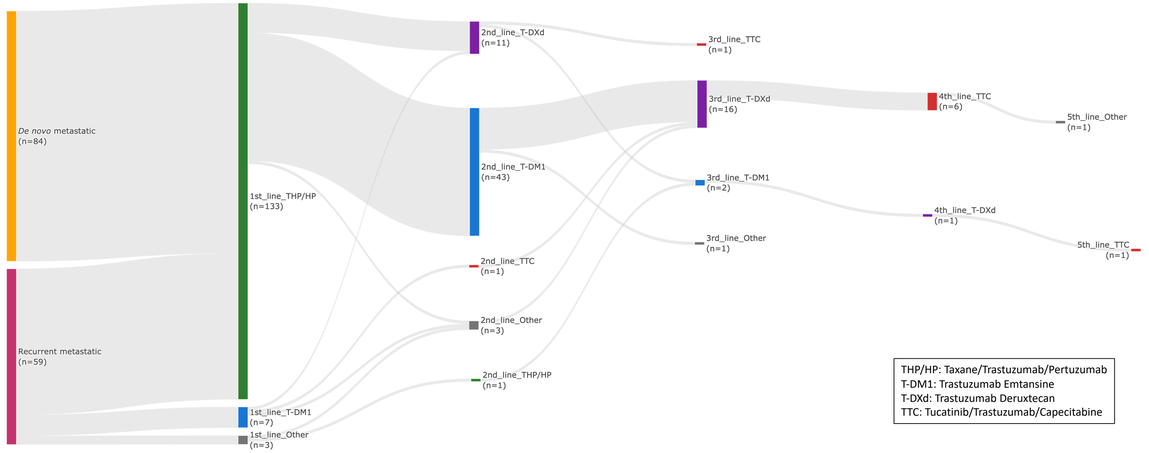


Figure 1. Pathways showing initial metastatic presentation (*de novo* vs. recurrent) and subsequent treatment sequence.

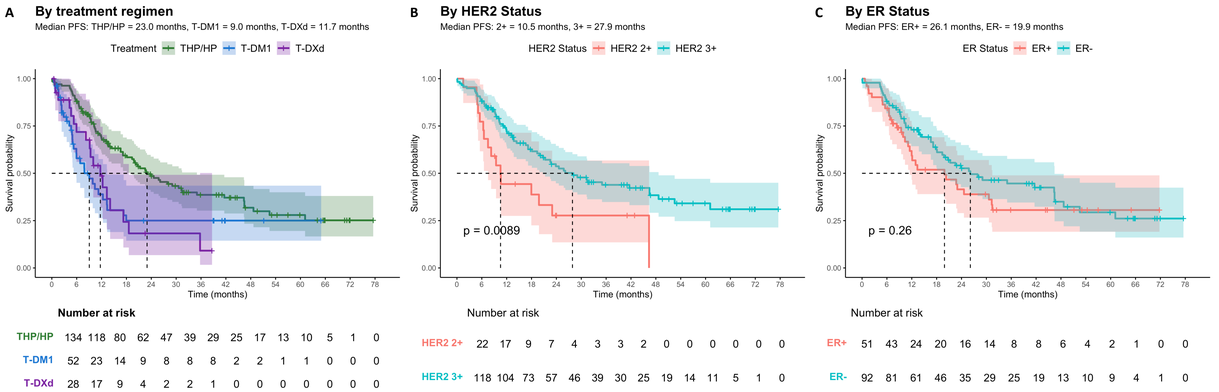


Figure 2. Kaplan-Meier analysis of PFS of HER2-positive MBC subgroups. A. PFS by treatment regimen. B. PFS by HER2 status. C. PFS by ER status.

	n	Median PFS (months) (95% CI)	Progressed within 12-months	Attrition rate
1st line	143	23.0 (19.4 - 35.0)	31.7 %	26 %
2nd line	59	9.1 (6.8 - 12.3)	65.7 %	38 %
3rd line	20	9.0 (5.95 - NE)	52.2 %	38 %
THP	134	23.0 (19.4 - 35.0)	31.5 %	22 %
T-DM1	52	9.0 (5.9 - 13.3)	61.1 %	27 %
T-DXd	28	11.7 (9.1 - 18.6)	51.3 %	25.9 %
ER+	92	26.1 (19.8 - 46.5)	27.0%	
ER –	51	19.9 (11.5 - 31.4)	47.0%	
HER2 2+ (ISH+)	22	10.5 (7.5 - NE)	55.7%	
HER2 3+	118	27.9 (20.7 - 48.7)	27.9%	

Table 2. Real-world PFS in subgroups of patients with HER2-positive MBC

- Observed mPFS for THP (23.0 months) was comparable to the THP arms of CLEOPATRA (18.7 months)[3] and DESTINY-Breast09 (26.9 months)[2].
- T-DM1 (9.0 months) performed slightly better than the control arm of DESTINY-Breast03 (6.8, CI 5.6-8.2 months)[1].
- T-DXd in this small series performed considerably worse (11.7 months) than in DESTINY-Breast03 (28.8 months)[1] but was comparable to other real-world experience (12.3 months)[4].
- After median follow-up of 27.6 months, 44 patients have died with 15 patients (34%) dying from CNS disease and median OS was not reached.
- Two patients treated with T-DXd experienced grade 5 pulmonary toxicity.
- Observed attrition rates mirrored published findings with a quarter to a third of patients not receiving a further line of treatment at progression[5].

Conclusions

- 1st and 2nd line PFS was similar to published phase 3 studies at Guy's Cancer which serves one of the most ethnically diverse populations in the world.
- Although T-DXd performed better than T-DM1 in our population, it fell short of the outcomes seen in the DESTINY studies. However, this is limited by the small number of patients treated and the short follow-up.
- High attrition rates and death from CNS disease in 1/3 of patients supports the earlier use of T-DXd in this population.

Contact

Dr Haixi Yan
Guy's and St Thomas' NHS Foundation Trust
Email: haixi.yan2@nhs.net

Dr Hartmut Kristeleit
Guy's and St Thomas' NHS Foundation Trust
Email: h.kristeleit@nhs.net

References

1. Cortés, J. et al. Trastuzumab Deruxtecan versus Trastuzumab Emtansine for Breast Cancer. N Engl J Med 386, 1143–1154 (2022).
2. Tolaney, S. M. et al. Trastuzumab deruxtecan (T-DXd) + pertuzumab (P) vs taxane + trastuzumab + pertuzumab (THP) for first-line (1L) treatment of patients (pts) with human epidermal growth factor receptor 2–positive (HER2+) advanced/metastatic breast cancer (a/mBC): Interim results from DESTINY-Breast09. JCO 43, (2025).
3. Swain, S. M. et al. Pertuzumab, trastuzumab, and docetaxel for HER2-positive metastatic breast cancer (CLEOPATRA): end-of-study results from a double-blind, randomised, placebo-controlled, phase 3 study. The Lancet Oncology 21, 519–530 (2020).
4. Tarantino, P. et al. Outcomes with trastuzumab deruxtecan by biomarker status, line of treatment and prior receipt of sacituzumab govitecan in a large real-world database of patients with metastatic breast cancer. ESMO Open 10, 105330 (2025).
5. Cottu, P. et al. Attrition between lines of therapy and real-world outcomes of patients with HER2-positive metastatic breast cancer in Europe: a cohort study leveraging electronic medical records. Breast Cancer Res Treat 209, 419–430 (2024).

This presentation is the intellectual property of the author/presenter. Contact them at haixi.yan2@nhs.net for permission to reprint and/or distribute.

© Poster Template by Genigraphics® 1.800.790.4001 www.genigraphics.com