Poster PS1-05-15

Trends in the utilization of prophylactic antiemetic therapy among patients initiating trastuzumab deruxtecan for metastatic breast cancer in the United States

C. H. Shah,[1] C. Nordon,[2] E. Langford,[3] X. Zhao,[3] B. Adeyemi,[1] E. John,[2] A. M. Near,[3] H. Moore[4]

[1]AstraZeneca, Gaithersburg, MD, USA; [2]AstraZeneca, Cambridge, United Kingdom; [3]IQVIA, Durham, NC, USA; [4]Duke Cancer Institute, Durham, NC, USA

Objective

- To better understand real-world use of antiemetic drug (AED) prophylaxis among patients with mBC who initiate T-DXd and the baseline demographic and clinical characteristics of these patients.

Conclusions

- Adherence to the NCCN Guidelines® for prophylactic antiemesis in patients with mBC initiating T-DXd is on the rise in the US following the 2023 guideline update; however, there remains room for improvement of guideline implementation.
- Findings suggest an opportunity to improve care among patients with mBC who initiate T-DXd along with mono or dual AED regimens, as there do not seem to be predisposing baseline clinical or demographic patient characteristics presenting a barrier to prescribing triple/quadruple AED regimens at T-DXd initiation.
- Among patients who had prophylactic AED regimens at T-DXd initiation and AED regimens at subsequent T-DXd cycles, 41% of patients initially on monotherapy and 26% initially on dual therapy had AED therapy augmentation, compared to only 6% initially on triplet/quadruplet regimens. Conversely, the corresponding percentages for subsequent reductions in AED therapy was 0%, 13%, and 24% for patients initially on mono, dual, or triplet/quadruplet regimens, respectively. These results highlight the better patient experience as well as the potential for subsequent AED treatment de-escalation among patients that started with triplet/quadruplet AED regimens initially.

Plain language summary

Why did we perform this research?

- T-DXd is a targeted cancer medicine used for metastatic breast cancer (mBC) across HER2-positive, HER2-low, and HER2-ultralow disease in the US.[1]
- In January 2023, national anti-nausea (antiemetic) guidelines changed. They now classify T-DXd as a treatment with a high risk of causing nausea and vomiting and recommend starting patients on three or four anti-nausea drugs together (called “triplet” or “quadruplet” prophylaxis) from the first treatment to prevent chemotherapy-induced nausea and vomiting (CINV).[2]
- We wanted to understand how often these stronger anti-nausea combinations are used in routine care when patients start T-DXd, and what types of patients receive them.

How did we perform this research?

- Health insurance claims data between Jan 1, 2019, and Sept 30, 2024 of patients with mBC who started T-DXd treatment were analyzed.

What were the findings of this research?

- From Jan 2022 to Apr 2024, the use of three- or four-drug regimens for nausea/vomiting prevention surged (19% to 70%), while the use of one- (10% to 4%) or two-drug (63% to 19%) regimens declined; no anti-nausea drug use stayed at ~7%, during the first T-DXd initiation.
- For patients who had an anti-nausea preventive regimen from their first T-DXd cycle and were on an anti-nausea regimen in a later cycle, 41% of those starting with a one-drug regimen and 26% of those starting with a two-drug regimen added more anti-nausea drug classes in their regimens at later T-DXd administrations.
- Patients with one-, two-, or three/four-drug anti-nausea preventive regimens had similar baseline characteristics.

What are the implications of this research?

- Clinicians are increasingly starting T-DXd with three/four anti-nausea medicines, in line with guidelines.
- Beginning with three or four-drug anti-nausea regimens may reduce the need to intensify the regimen later and improve patients’ treatment experience.
- Continued education can help more patients receive guideline-recommended prevention from the start.

1. United States Food and Drug Administration (FDA). Highlights of prescribing information - ENHERTU® (fam-trastuzumab deruxtecan-nxki) for injection, for intravenous use. January 2025 (https://www.accessdata.fda.gov/drugsatfda_docs/label/2025/761139s032s035lbl.pdf). Accessed September 24, 2025.
2. NCCN Clinical Practice Guidelines in Oncology (NCCN Guidelines®) Antiemesis. Published online December 13, 2023. https://www.nccn.org/professionals/physician_gls/pdf/antiemesis.pdf

This study was sponsored by AstraZeneca. In March 2019, AstraZeneca entered into a global development and commercialization collaboration agreement with Daiichi Sankyo for trastuzumab deruxtecan (T-DXd; DS-8201).
Poster presented at 2025 San Antonio Breast Cancer Symposium by Dr. Heather Moore. Corresponding author email address: heather.n.moore@duke.edu.

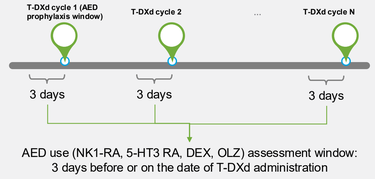
Introduction

- T-DXd is approved in the US for unresectable or metastatic breast cancer (mBC), in patients with HER2+ mBC after prior anti-HER2-based regimen and patients with HER2-low / ultralow mBC after endocrine-based therapy.[1]
- In January 2023, the NCCN categorized T-DXd as highly emetogenic and prophylactic triplet/quadruplet antiemetic drugs (AED) at T-DXd initiation are recommended.[2]
- Given the prevalence and burden of nausea/vomiting symptoms in patients using T-DXd, the implementation of guideline-recommended AED prophylaxis is essential for improving patient treatment experience.
- We aimed to describe patterns of AED use in routine clinical practice, as prophylaxis and over the course of T-DXd treatment.

Methods

- This retrospective study analyzed IQVIA PharMetrics Plus® adjudicated medical and pharmacy claims between Jan 1, 2019 – Sep 30, 2024.
- Adult patients with mBC, who initiated T-DXd (index date) between Jan 1, 2020 – Apr 1, 2024, who had 12 months of continuous enrolment data pre-index (baseline) and no other primary cancer at baseline were included and followed until Sep 30, 2024 or earlier if end of continuous enrollment.
- Prophylactic use was defined as dispensation of guideline recommended AED within 3 days before or on index date of first T-DXd administration.
- The number of AED was determined using drug class level (NK1-RA, 5-HT3 RA, dexamethasone [DEX], olanzapine [OLZ]).
- AED use was then measured at each subsequent cycle of T-DXd (**Figure 1**).
- HER2 status was determined using proxy-variables: (1) HER2+ status was “plausible” if patients had initiated T-DXd prior to Aug 1, 2022 or had another HER2-targeted therapy prior to T-DXd; or (2) HER2-low status was assigned if neither of these criteria were met.
- AED prophylactic use was categorized as none, mono, dual, triplet/quadruplet (3+).
- All study measures were described using summary statistics as percentages for categorical variables and as means for continuous variables.

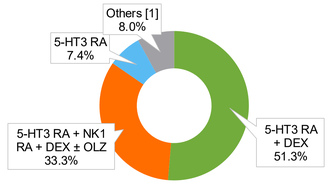
Figure 1. AED use assessment window



Results

- 1,024 patients initiated T-DXd between Jan 1, 2020 and Apr 1, 2024; 574 (56.1%) had plausible HER2+ mBC; baseline characteristics are in **Table 1.**
- Among all patients with mBC initiating T-DXd, 31.3% had triplet/quadruplet, 50.8% had dual, 9.5% had mono, and 8.5% had no prophylactic AED use at T-DXd initiation over the entire study period.
- Overall, 937 patients (91.5%) received any AED prophylaxis regimen among whom 51.3% received 5-HT3 RA + DEX and 33.3% received 5-HT3 RA + DEX + NK1 RA ± OLZ (**Figure 2**)

Figure 2. Most common prophylactic AED regimens among patients with any prophylaxis (N=937)

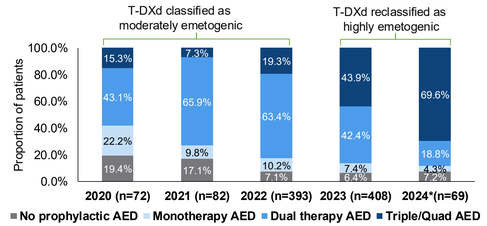


[1]Other AED regimens included 2.6% on DEX, 2.6% on 5-HT3 RA + NK1 RA, 1.5% on NK1 RA + DEX, and other regimens that presented in <1% of patients.

Annual trends of prophylactic AED use at T-DXd initiation

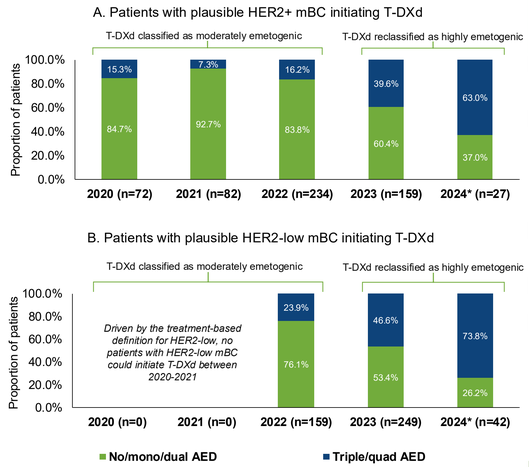
- From Jan 1, 2022, to Apr 1, 2024, the proportion of patients receiving triplet/quadruplet regimens at T-DXd initiation increased from 19.3% to 69.6% and no AED prophylaxis remained constant at 7% (**Figure 3**).
  - Similar trend of increasing triplet/quadruplet AED use was observed among patients with plausible HER2+ mBC and those with plausible HER2-low mBC (**Figure 4**).

Figure 3. AED prophylaxis use among patients with mBC initiating T-DXd, Jan 1, 2020 – Apr 1, 2024, overall



[1]Based on data from Jan 1 – Apr 30 in 2024.

Figure 4. AED prophylaxis use (3+ vs fewer) among patients with mBC initiating T-DXd, by HER2-status



[1]Based on data from Jan 1 – Apr 30 in 2024.

Baseline characteristics

- Relative to patients with any AED prophylaxis, those with no prophylaxis were likely older (mean age: 62.9 [12.3] years vs. 58.6 [11.5] years), tended to be indexed earlier in the study period, tended to use AEDs less frequently before the index prophylaxis window (77.0% vs. 89.8%), had a higher proportion with NCI comorbidity index score >0 (48.3% vs 42.1%), along with a lower proportion with brain metastasis (9.2% vs. 26.9%; **Table 1**).
- Patients with mono, dual, or triple/quadruple prophylactic regimens were generally similar in terms of baseline characteristics

AED use upon subsequent T-DXd administrations

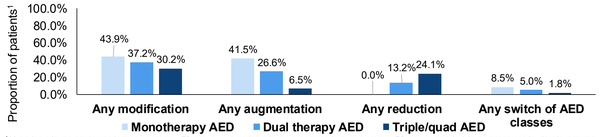
- Of 87 patients without prophylactic AEDs at T-DXd cycle 1, 17.2% (n=15) received only one cycle, while 44.4% (n=32) of those with ≥2 cycles initiated AED use upon subsequent T-DXd administrations.
- 838 (81.8%) patients had a prophylactic AED regimen at T-DXd cycle 1 and at least one subsequent cycle. Of these patients, 41.5% on monotherapy, 26.6% on dual therapy, and 6.5% on triple/quadruple therapy had more AED classes added to the regimen (i.e., augmentation). Correspondingly, a subsequent reduction of 0.0%, 13.2%, and 24.1% of AED classes was observed for patients initially on mono, dual, or triplet/quadruplet regimens, respectively (**Figure 5**).

Table 1. Baseline patient characteristics

Baseline characteristics[1]	Overall cohort N=1,024	No AED prophylaxis n=87	Any AED prophylaxis n=937	Mono AED prophylaxis n=97	Dual AED prophylaxis n=520	Triple/quad AED prophylaxis n=320
Age at index						
Mean (SD)	58.9 (11.7)	62.9 (12.3)	58.6 (11.5)	59.5 (11.2)	58.4 (11.6)	58.6 (11.6)
≥65 years, n (%)	287 (28.0)	42 (48.3)	245 (26.1)	28 (28.9)	128 (24.6)	89 (27.8)
Index year, n (%)						
2020	72 (7.0)	14 (16.1)	58 (6.2)	16 (16.5)	31 (6.0)	11 (3.4)
2021	82 (8.0)	14 (16.1)	68 (7.3)	8 (8.2)	54 (10.4)	6 (1.9)
2022	393 (38.4)	28 (32.2)	365 (39.0)	40 (41.2)	249 (47.9)	76 (23.8)
2023	408 (39.8)	26 (29.9)	382 (40.8)	30 (30.9)	173 (33.3)	179 (55.9)
2024	69 (6.74)	5 (5.7)	64 (6.8)	3 (3.1)	13 (2.5)	48 (15.0)
Plausible HER2 status, n (%)						
HER2+	574 (56.1)	63 (72.4)	511 (54.5)	65 (67.0)	311 (59.8)	135 (42.2)
HER2-low	450 (43.9)	24 (27.6)	426 (45.5)	32 (33.0)	209 (40.2)	185 (57.8)
NCI comorbidity index, n (%)						
>0	431 (42.1)	42 (48.3)	389 (41.5)	41 (42.3)	224 (43.1)	124 (38.8)
Baseline nausea/vomiting risk factors, n (%)						
Prior AED use	908 (88.7)	67 (77.0)	841 (89.8)	89 (91.8)	457 (87.9)	295 (92.2)
Infection or septicemia	687 (67.1)	56 (64.4)	631 (67.3)	64 (66.0)	354 (68.1)	213 (66.6)
Opioid use	678 (66.2)	43 (49.4)	635 (67.8)	59 (60.8)	350 (67.3)	226 (70.6)
Nausea/vomiting	393 (38.4)	32 (36.8)	361 (38.5)	34 (35.1)	198 (38.1)	129 (40.3)
Brain metastasis	260 (25.4)	8 (9.2)	252 (26.9)	26 (26.8)	144 (27.7)	82 (25.6)

[1]Based on claims within the fixed 12-month baseline period

Figure 5. Changes to AED regimen from T-DXd initiation among patients with AED regimen at T-DXd initiation and at least one subsequent cycle[1] (n=838)



[1]82 patients in the prophylactic monotherapy AED group, 478 patients in the prophylactic dual therapy AED group, and 278 in the prophylactic triple/quadruple AED group

Limitations

- Administrative claims are collected for billing purposes. There may be potential misclassification due to coding errors and treatment-based proxies of HER2 status. Additionally, due to the nature of the data, for AEDs with multiple indications (e.g., dexamethasone), we could not confirm that it was prescribed for CINV management.
- The study findings may be affected by the NCCN guideline change in 2023 and T-DXd’s approval for second line anti-HER2 therapy in 2022.
- Limited generalizability to uninsured or underinsured patients and patients covered by fee-for-service Medicare or Medicaid due to the nature of the data source.

Abbreviations

AED, antiemetic drug; CINV, chemotherapy-induced nausea and vomiting; DEX, dexamethasone; ECOG-PS, Eastern Cooperative Oncology Group Performance Status; HER2, human epidermal growth factor receptor 2; mBC, metastatic breast cancer; NCCN, National Comprehensive Cancer Network; NCI, National Cancer Institute; OLZ, olanzapine; SD, standard deviation; T-DXd, trastuzumab deruxtecan; US, United States; 5-HT3 RA, 5-hydroxytryptamine type 3 receptor antagonist; NK1 RA, neurokinin 1 receptor antagonist.

Disclosures

C. H. Shah, C. Nordon, B. Adeyemi, and E. John are employees of AstraZeneca and have stock ownership and/or stock options or interests in the company. E. Langford, X. Zhao, and A. M. Near are employees of IQVIA, which received consulting fees to conduct this study. H. Moore serves as a consultant for AstraZeneca/Daiichi Sankyo, Lilly, Pfizer, Genentech, Gilead, and Menarini Stemline.

References

1. United States Food and Drug Administration (FDA). Highlights of prescribing information - ENHERTU® (fam-trastuzumab deruxtecan-nxki) for injection, for intravenous use. January 2025 (https://www.accessdata.fda.gov/drugsatfda_docs/label/2025/761139s032s035lbl.pdf). Accessed September 24, 2025.
2. NCCN Clinical Practice Guidelines in Oncology (NCCN Guidelines®) Antiemesis, version 1.2023. Published online January 25, 2023.
3. Notini G, Naldini M, Sica L, et al. Management of Trastuzumab Deruxtecan-related nausea and vomiting in real-world practice. Front Oncol 2024;14:1374547.