HSD26

Comparing Countries' Time to Treatment Initiation: A Study of Metastatic Breast Cancer in Austria and the United States

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Background

- Timely initiation of systemic therapy following **metastatic breast cancer (mBC)** diagnosis is associated with improved outcomes.
- Health system structures, reimbursement processes, and access to oncology care differ across countries and may influence treatment timing.
- Cross-country comparisons of real-world data (RWD) can highlight how healthcare delivery affects treatment initiation and inform the **transportability of real-world evidence (RWE).**
- **Objective**: Compare time from mBC diagnosis to first-line (1L) systemic therapy initiation in the Austria and United States (US) cohorts, overall and by subtype.

Methods

- **Data sources:**
  - **Austria:** AGMT (Austrian Group Medical Tumor Therapy) Registry – a nationwide, prospective registry capturing patient characteristics, treatments, and outcomes across Austrian oncology centers [1]
  - **US:** Flatiron Health Research Database — derived from de-identified, electronic health record–derived data from community and academic practices [2]
- **Study population:** Adults diagnosed with mBC between Jan 2015 and Sept 2024, with follow-up through Dec 2024 (Austria: n = 1,292; US: n = 21,215).
- **Variable definitions:**
  - **Subtype:** Derived from pathology records (ER, PR, HER2 IHC/ISH) using standardized, harmonized algorithms across datasets.
  - **Outcome**: Days from mBC diagnosis to initiation of first-line (1L) systemic therapy for mBC.
- **Analysis:**
  - Descriptive analyses of time to treatment initiation overall and by tumour subtype
  - No adjustment for patient mix or covariates; results intended for descriptive comparison only
  - Truncated distributions of time-to-treatment (0-90days) were visualized using bar charts.

Table 1. Patient Inclusion and Exclusion Criteria Applied to the US and Austrian Cohorts

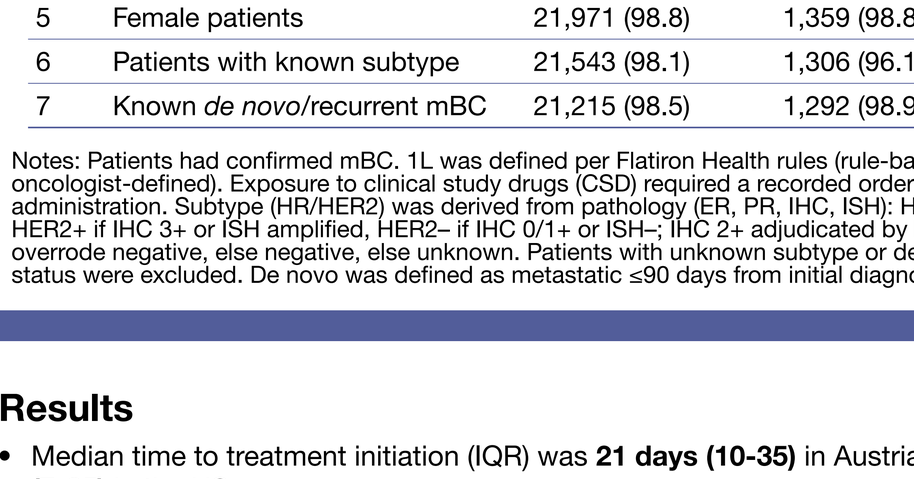
Step	Inclusion / Exclusion criteria	US cohort, n (%)	Austria cohort, n (%)
1	mBC diagnosis in 2015 or later and age 18+ around diagnosis	30,730 (100.0)	1,719 (100.0)
2	Patients treated with 1L	26,730 (87.0)	1,615 (93.9)
3	1L start within –14/+90 days	22,658 (84.8)	1,478 (91.5)
4	Patients without clinical study drug exposure in 1L	22,247 (98.2)	1,375 (93.0)
5	Female patients	21,971 (98.8)	1,359 (98.8)
6	Patients with known subtype	21,543 (98.1)	1,306 (96.1)
7	Known *de novo*/recurrent mBC	21,215 (98.5)	1,292 (98.9)

Notes: Patients had confirmed mBC. 1L was defined per Flatiron Health rules (rule-based or oncologist-defined). Exposure to clinical study drugs (CSD) required a recorded order or administration. Subtype (HR/HER2) was derived from pathology (ER, PR, IHC, ISH): HR+ if ER or PR+, HER2+ if IHC 3+ or ISH amplified, HER2– if IHC 0/1+ or ISH–; IHC 2+ adjudicated by ISH; any positive overrode negative, else negative, else unknown. Patients with unknown subtype or de novo/recurrent status were excluded. De novo was defined as metastatic ≤90 days from initial diagnosis.

Results

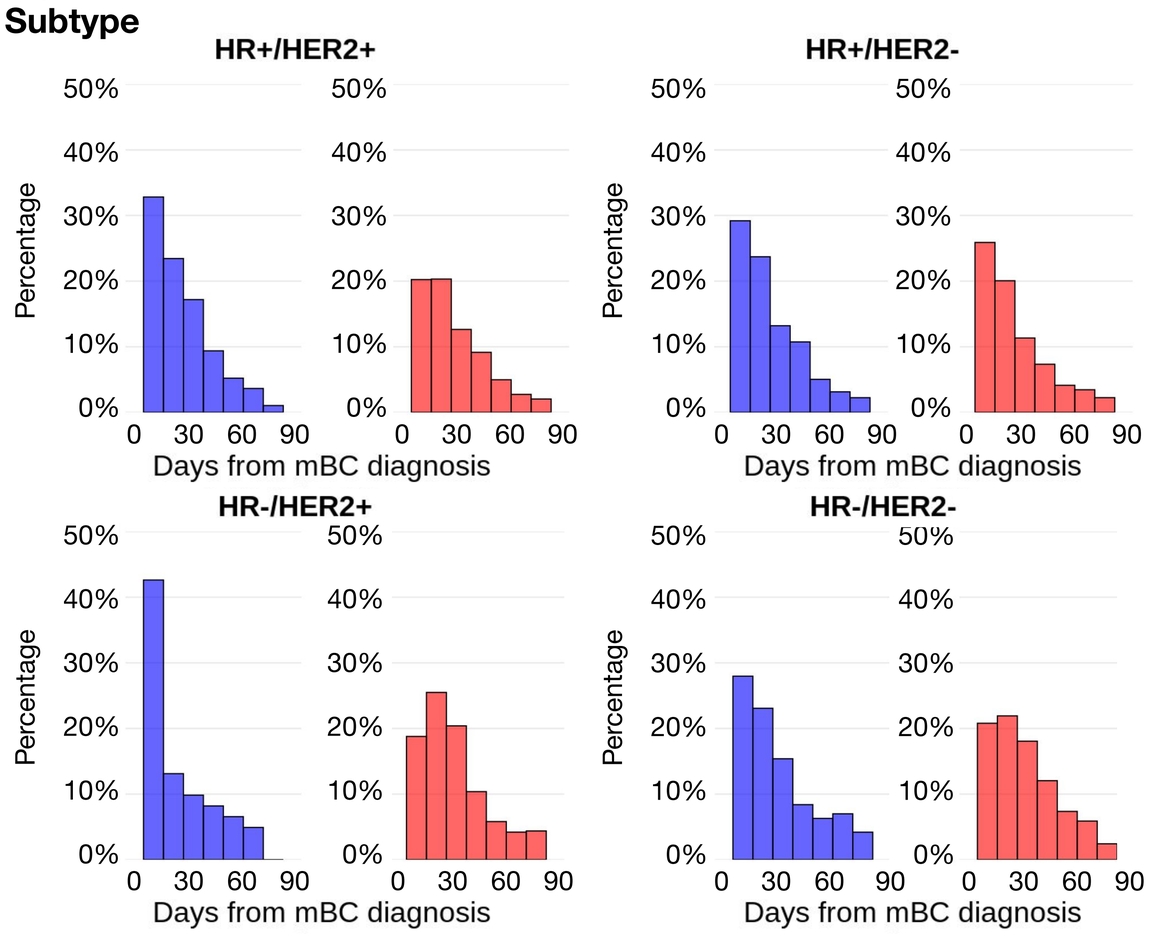
- Median time to treatment initiation (IQR) was **21 days (10-35)** in Austria and **18 days (7-35)** in the US.
- By tumour subtype:
  - **HR+/HER2+**: Austria 20 (13–35); US 19 (4–35)
  - **HR+/HER2–**: Austria 21 (10–35); US 16 (6–32)
  - **HR–/HER2+**: Austria 14 (8–32); US 27 (15–41)
  - **HR–/HER2–**: Austria 25 (12–42); US 27 (14–42)
- Distributions were truncated to 0-90 days by design, limiting evaluation of outliers and longer initiation times.

Figure 1. Time to Treatment Initiation in the Austria and US cohorts



Notes: 1L was defined using Flatiron rules, allowing treatment start up to 14 days before the mBC diagnosis date. Negative values were recoded as 0, and values 90 were capped at 90

Figure 2. Time to Treatment Initiation in the Austria and US cohorts by Subtype



Notes: 1L was defined using Flatiron Health rules, allowing treatment start up to 14 days before the mBC diagnosis date. Negative values were recoded as 0, and values greater than 90 were capped at 90

Results (cont.)

- Subtype-specific differences were modest overall but may reflect variations in care delivery, testing, or data capture.
- Across countries and subtypes, over half of patients initiated 1L systemic therapy within 30 days of metastatic diagnosis.

Across most subtypes, the **time from metastatic diagnosis to treatment initiation in breast cancer appeared similar between the Austria and US cohorts.** However, the shorter times in the US cohort for some subgroups may reflect differences in case delivery or data quality

Discussion

Overall, observed time to treatment initiation was similar between the Austria and US cohorts, though differences by subtype may arise from data capture and healthcare delivery context rather than clinical practice alone. These findings are exploratory and should not be interpreted as evidence of equivalence between countries or health systems.

Limitations

- **Data source differences**: The Austrian registry and US EHR data reflect distinct healthcare systems, care settings, and data collection processes, which may influence observed timing independent of true clinical differences. Generalizability within each country remains uncertain.
- **Cohort definitions and completeness**: Although both datasets included patients with confirmed mBC, completeness of subtype and de novo/recurrent classification may vary.
- **Unmeasured confounders**: Factors such as comorbidities, access barriers, or patient preference were not harmonized across datasets.
- **Analytical scope**: Analyses were descriptive and did not adjust for patient mix or system-level variables, which limits causal interpretation.

Future directions

- Future work should examine fit-for-purpose data selection and cross-country comparability, considering coverage of metastatic diagnoses, completeness of therapy capture, and system-level differences in referral and testing.
- Methodological extensions (e.g., adjustment for care setting, multilevel modeling) may improve interpretability of international RWD comparisons.
- Broader efforts should aim to advance transparent and reproducible approaches for assessing time-to-treatment and other quality indicators using heterogeneous data sources.

References: [1] AGMT_MBC Registry. Accessed October 7, 2025. http://agmt.at/mbc-registry/?lang=en; Flatiron Health. Database Characterization Guide. Flatiron.com. Published March 18, 2025. Accessed October 1, 2025. https://flatiron.com/database-characterization
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