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Background

- Breast cancer (BC) is one of the most commonly diagnosed cancers globally, but health systems, screening, and treatment guidelines differ across countries, potentially affecting outcomes.
- The objective of the study was to quantify screening, diagnosis, and treatment patterns of early BC in Germany and the United States (US).

Methods

- Administrative claims data from Germany (AOK Plus) and the US (Forian’s “CHRONOS”) from 2017 to 2023 were used in this retrospective cohort study.
- AOK PLUS is the sixth largest German statutory health insurance (SHI) fund, covering approximately 3.5 million insured persons in the regions of Saxony and Thuringia in central-eastern Germany. This corresponds to 50% of the local population and about 4-5% of the German SHI population.
- Forian’s CHRONOS is a US-based, nationally representative, integrated open and closed claims hybrid data ecosystem, comprising over eight billion annual claims and over 270 million annual lives with data from 2015-2025.
- Adult women with an incident diagnosis of early (non-metastatic) BC, continuous insurance coverage, and no other concomitant cancers were included. Demographic, clinical, screening, and treatment characteristics were summarized descriptively using means, standard deviations (SD), and ranges.
- Time from screening to diagnosis (TTD) was summarized using Kaplan-Meier methods.

Results

Overview:

- After applying all selection criteria, 11,870 patients were identified from Germany and 59,870 were identified from the US.
- The mean age of early BC patients was similar across countries: 65.8 years (SD: 15.1) in Germany and 65.5 years (SD: 12.9) in the US (**Table 1**).
- The most common comorbidities differed by type and prevalence across countries.

Table 1: Characteristics of early BC patients in Germany and the US

	Germany	United States
Mean age (SD)	65.8 (15.1)	65.5 (12.9)
Median age (range)	65 (18-103)	67 (18-80)
Age 18-49 years	1,607 (13.5%)	7,978 (13.3%)
Age 50-64 years	4,050 (34.1%)	18,033 (30.1%)
Age 65+ years	6,213 (52.3%)	33,861 (56.6%)
Most common comorbidity	I10: Hypertension 7,138 (60.1%)	I10: Hypertension 16,056 (26.8%)
Second most common comorbidity	M54: Back pain 5,102 (43.0%)	E785: Hyperlipidemia unsp. 8,345 (13.9%)
Third most common comorbidity	E78: Lipid disorders 3,847 (32.4%)	E119: T2DM without comp. 5,994 (10.0%)

Screening:

- BC screening among German patients aged 18-49 could not be differentiated from diagnostic procedures using procedure codes.
- German women aged 50-64 were more likely than US women aged 50-64 to be screened while US women aged 65+ were more likely to receive screening than German women aged 65+. Time from screening to diagnosis was shorter in Germany than the US (**Table 2**).

Table 2: BC Screening in Previous 12 Months, Time to Diagnosis (TTD)

	Germany	United States
Screened, age 18-49	N/A	3,036 (38.1%)
Mean (SD) TTD in days, age 18-49	N/A	54.0 (83)
Screened, age 50-64	1,772 (43.8%)	5,354 (29.7%)
Mean (SD) TTD in days, age 50-64	39.8 (79.9)	77.4 (99.6)
Screened, age 65+	762 (12.3%)	7,119 (21.0%)
Mean (SD) TTD in days, age 65+	38.1 (79.9)	97.4 (108.7)

Treatment:

- Treatment patterns within 90 days after BC diagnosis varied widely across countries (**Table 3**).
- In Germany, 25.3% received surgery + radiotherapy + endocrine therapy; monotherapy was relatively uncommon.
- In the US, the most common regimen was surgery alone (10.9%), followed by radiotherapy (2.8%).

Table 3: First-line Therapy (90 days post-index) Treatment Patterns

Regimen	Germany	Regimen	United States
Surgery + Radiotherapy + Endocrine therapy	2,998 (25.3%)	Surgery only	6,508 (10.9%)
Surgery + Endocrine therapy	1,009 (8.5%)	Radiotherapy only	1,699 (2.8%)
Surgery + Radiotherapy + Chemotherapy + Endocrine therapy	915 (7.7%)	Endocrine therapy only	817 (1.4%)

Conclusions

Women with an early BC diagnosis and meeting other study criteria in Germany and the US had a similar mean age, although the German cohort included older patients, likely due to differences in payer types for elderly patients across countries. Other health system-level differences such as the lack of procedure codes for the identification of screening in German patients aged <50 were also observed. Time from screening to diagnosis in the US was longer than that in Germany and increased with patient age. Considerable treatment differences were also noted, potentially highlighting the diversity of treatment options depending on cancer subtype. Future research should be conducted to investigate the effects of these differences on the outcomes of patients with early BC in Germany and the US.

Disclosure statement

No disclosures other than those related to the listed affiliations need to be reported.

Abbreviations

BC= Breast Cancer
Comp.= Complications
SD= Standard deviation
TTD= Time to diagnosis
Unsp.= Unspecified
US= United States