Incidence, treatment and overall survival of patients with metastatic solid tumors in Germany: a claims data analysis

EPH22

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BACKGROUND

- Contemporary real-world evidence on the incidence, treatment patterns, and survival of patients with metastatic solid tumors in routine care in Germany is limited
- German claims data provide population-based insights into routine clinical care
- Such real-world evidence can inform healthcare planning and HTA decision-making

PURPOSE

- To estimate annual incidence of newly diagnosed metastatic solid tumors in German adults
- To describe antineoplastic treatment and survival overall and by tumor type

METHODS

- This was a retrospective analysis based on anonymized nationwide claims data from statutory health insurances (SHI) in the WIG2 database (~4.5 million insured individuals)
- Adults with newly diagnosed metastatic solid tumors were identified between 2015–2023 by a confirmed solid tumor diagnosis (one inpatient or two outpatient diagnoses with ICD-10 C00–C75, C80) combined with a first recorded metastasis diagnosis (ICD-10 C78–C79) after ≥12 months without prior metastasis claims, defining the index quarter
- A look back period (1–9 years) was used to determine if the metastatic solid tumor was newly diagnosed
- Incidence was standardized by age and sex to the SHI and German populations
- Antineoplastic treatment was assessed during first year after metastatic diagnosis (≥1 record of ATC L01 (excl. L01CH/CP/CX) or OPS 8-54(excl. 8-548))
- Real-world overall survival (rwOS) was estimated from index using Kaplan–Meier methods

RESULTS

Patient characteristics

- 67,273 patients with newly diagnosed metastatic solid tumors, with a mean age of 69.2 years (standard deviation: 12.1) at metastasis and a higher proportion of male patients (58.9%) were identified; see **Table 1**
- Most patients (n=21,948) had malignant neoplasms of digestive organs (C15–C26), followed by malignant neoplasms of respiratory and intrathoracic organs (C30–C39, n=17,751), male genital organs (C60–C63, n=9,649), ill-defined, secondary, and unspecified sites (C76–C80, n=9,478), and breast (C50, n=8,519); see **Figure 1**

Table 1. Baseline characteristics

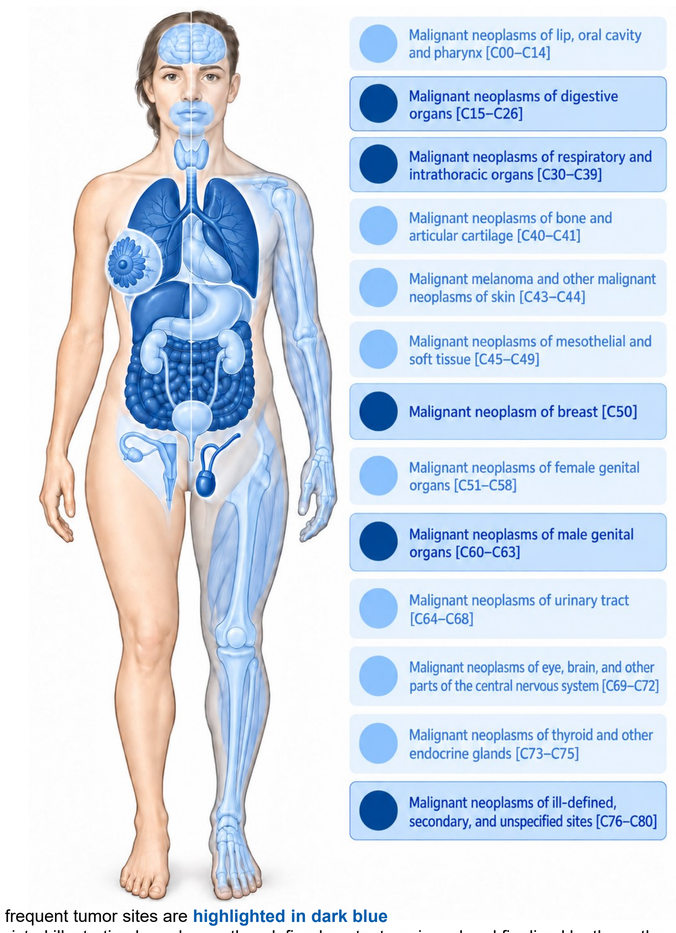
Characteristic	Overall (n=67,273)
Age [years]	
mean (SD)	69.2 (12.1)
median (range)	70 (18-103)
Gender	
male, n (%)	39,612 (58.9%)
female, n (%)	27,661 (41.1%)
CCI	
mean (SD)	6.8 (3.5)
median (range)	6 (0-23)

Abbreviations: CCI, Charlson comorbidity index; SD, standard deviation

Real-world overall survival (rwOS)

- The one-year rwOS ranged from ~20% to ~80%, depending on tumor type: lowest for malignant neoplasms of the gallbladder (20.5%) and pancreas (23.3%) and highest for testis (78.4%) and breast (68.3%); **Table 2a** (shows the tumor types with the highest and lowest one-year survival rates)
- The five-year overall rwOS ranged from ~3% to ~70% with the lowest rate for malignant neoplasms of the gallbladder (2.9%) and the highest rate for testis (65.7%); **Table 2b** (shows the tumor types with the highest and lowest five-year survival rates)

Figure 1. Solid tumor types in the study population



Most frequent tumor sites are **highlighted in dark blue**
AI-assisted illustration based on author-defined content; reviewed and finalized by the authors

Table 2a. Bottom/Top 1-year real-world overall survival tumors

Solid tumor type (Bottom/Top 5)		Number of patients	Total 1-year survival probability
ICD-10	Description (Malignant neoplasms of)	n	In % with 95% confidence interval
C23	Gallbladder	447	20.5 (17.0, 24.7)
C25	Pancreas	4,940	23.3 (22.1, 24.5)
C22	Liver and intrahepatic bile ducts	2,438	29.6 (27.8, 31.5)
C24	Other and unspecified parts of biliary tract	894	30.1 (27.1, 33.3)
C45	Mesothelioma	350	30.3 (25.7, 35.6)
C57	Other/unspecified female genital organs	404	66.0 (61.4, 70.9)
C73	Thyroid gland	569	66.0 (62.2, 70.1)
C37	Thymus	86	66.6 (57.3, 77.6)
C50	Breast	8,519	68.3 (67.3, 69.3)
C62	Testis	531	78.4 (74.9, 82.0)

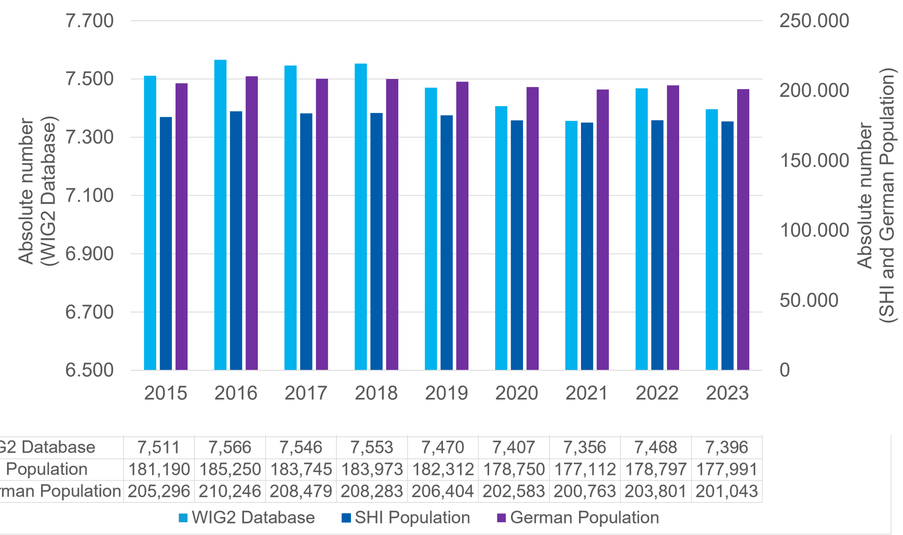
Table 2b. Bottom/Top 5-year real-world overall survival tumors

Solid tumor type (Bottom/Top 5)		Number of patients	Total 5-year survival probability
ICD-10	Description (Malignant neoplasms of)	n	In % with 95%-confidence interval
C23	Gallbladder	447	2.9 (1.6, 5.6)
C25	Pancreas	4,940	3.8 (3.2, 4.6)
C45	Mesothelioma	350	4.6 (2.5, 8.5)
C24	Other and unspecified parts of biliary tract	894	5.0 (3.6, 7.1)
C33	Trachea	40	5.5 (1.4, 21.1)
C72	Spinal cord, cranial nerves, other parts of central nervous system	56	38.6 (26.7, 55.8)
C47	Peripheral nerves and autonomic nervous system	31	44.8 (29.1, 68.9)
C73	Thyroid gland	569	46.2 (41.9, 51.1)
C46	Kaposi's sarcoma	24	48.3 (31.6, 73.7)
C62	Testis	531	65.7 (61.4, 70.4)

Incidence

- Extrapolation to the German population indicated that the estimated number of incident metastatic solid tumor patients remained relatively stable, ranging from ~200,000 to 210,000 patients annually between 2015 and 2023; see **Figure 2**

Figure 2. Absolute number of incident patients with metastatic disease (in the study database and projected for German and statutory health insurance populations)



Abbreviations: SHI, statutory health insurance; WIG2, Scientific institute for Health Economics and Health System Research

Treatment rates

- About half of patients received antineoplastic therapy within the first year after diagnosis, and this rate has remained stable over time

LIMITATIONS

- Claims data have limited clinical detail and generally do not capture cancer stage, ECOG performance status and disease severity
- Metastases were identified solely through ICD-10 diagnosis codes without other diagnostic confirmation. This may have led to undercapture or misclassification of metastatic disease.
- Treatment use may be underestimated because some antineoplastic therapies, including hormonal therapy, may not be reliably identified in claims data.
- Another limitation is that the number of cases was small for some tumor types, which limits the strength of evidence for these entities.

CONCLUSION

Between 2015 and 2023, metastatic solid tumors affected a substantial number of adults in Germany, with claims-based extrapolation indicating 200,000 newly diagnosed patients annually. The particularly low survival rates for some tumor types highlighted the heterogeneity of this real-world population and provided real-world insights into the disease burden of metastatic solid tumors in Germany

Presented at: International Society for Pharmacoeconomics and Outcomes Research (ISPOR) Europe 2026 – 8-11 November 2026, Vienna, Austria

FUNDING

This study and Poster presentation were funded by Daiichi Sankyo Europe GmbH, Munich, Germany.

DISCLOSURES

BM, TW, SM, YX, ML and CH are employees of Daiichi Sankyo. IL was an employee of Daiichi Sankyo at the time of his contribution to this work. SvS and NK are employees of ZEG Berlin, which received funding from Daiichi Sankyo to conduct this study.