Real-world treatment patterns and survival outcomes associated with locally advanced squamous cell carcinoma of the head and neck (LA SCCHN): a German claims data analysis

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SCOPE

- We report baseline demographics, clinical characteristics, treatment patterns, and survival outcomes in patients newly diagnosed with locally advanced squamous cell carcinoma of the head and neck (LA SCCHN) using data from the WIG2 German health claims database to provide real-world insights into the LA SCCHN population in Germany

CONCLUSIONS

- This study provides an assessment of clinical characteristics, treatment patterns, and real-world outcomes of patients with LA SCCHN in Germany
- Real-world management of patients with LA SCCHN included resection followed by adjuvant chemoradiotherapy (CRT) or radiotherapy (RT) and, for patients who did not undergo tumor resection, definitive CRT or RT
- Survival outcomes varied across primary tumor sites. Although the majority of patients received standard-of-care treatment, half of the patients died within 5 years after treatment, highlighting the urgent unmet need for better treatment options

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SUPPLEMENTARY DATA

Please scan this QR code to view supplementary data associated with this poster

BACKGROUND

- Head and neck cancers (HNCs) are the ninth most common cancer in men and 14th most common cancer in women in Germany, with ≈14,000 new cases per year[1]
- The majority of cases of HNC (≈90%) are squamous cell carcinomas,[2] and ≈60% of patients are diagnosed with LA SCCHN[3]
- Standard treatment options include surgery followed by CRT or RT or, for patients not undergoing surgery, definitive CRT[4]
- Heterogenous treatment approaches for LA SCCHN complicate the characterization of treatment patterns and the evaluation of real-world treatment outcomes
- We assessed real-world treatment patterns and survival outcomes in patients with LA SCCHN in Germany using data from a public health insurance claims database

METHODS

Data source

- Real-world data were extracted from the WIG2 benchmark database, a healthcare claims database with data from ≈4.5 million persons insured by 1 of various German statutory health insurance (SHI) providers (representing ≈5% of the German SHI population)
- Claims data from 2016 to 2020 were used and included core baseline demographics and full billing data of hospital and outpatient care and pharmaceuticals
- Claims data were fully anonymized before analyses were performed; all required approvals were obtained

Study design

- A noninterventional, retrospective cohort study in German clinical practice
- Adult patients newly diagnosed with HNC between 2016 and 2020 were included
  - Information on therapeutic procedures and the sequence of therapies were used to identify patients with LA SCCHN, as staging information was not available in the database (**Figure 1**)
  - A 2-year preindex period ensured no prior HNC diagnosis
  - Patients were required to have received treatment within 6 months of initial diagnosis and a follow-up
  - A postindex period of 12 months was applied, except in cases of early discontinuation or death
- Outcome measures included treatment patterns as well as overall survival (OS), estimated from the start of initial treatment using the Kaplan-Meier estimator
- Results were stratified by treatment intent (primary resection vs definitive nonsurgical)

Limitations

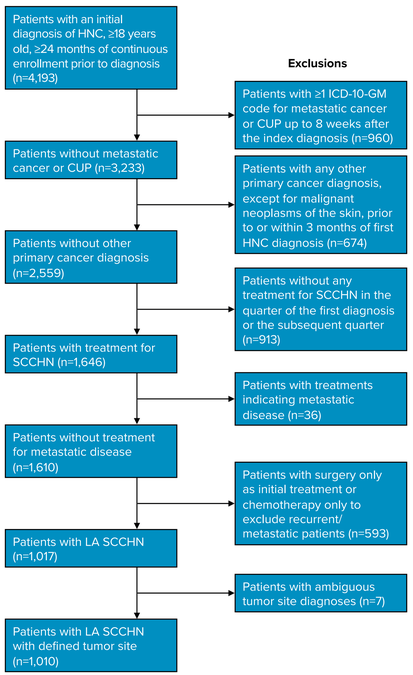
- Receiving treatment for HNC was required for inclusion in the study, which may have caused selection bias
- In order to exclude early-stage patients, patients with surgery only or chemotherapy only as initial treatment were excluded, leading to underreporting of primary resection rates
- The database does not contain tumor staging, human papillomavirus status, or histology data leading to potential misclassification
- In-hospital treatments in Germany are billed as a lump sum. Therefore, the identification of generic chemotherapy treatments was limited to outpatient visits

RESULTS

Patient selection

- A total of 1,010 patients met the eligibility criteria (**Figure 1**)

Figure 1. Flow diagram of patient selection.



CUP, cancer of unknown primary; **HNC,** head and neck cancer; **ICD-10-GM,** The International Statistical Classification of Diseases and Related Health Problems, 10th revision, German Modification; **LA,** locally advanced; **SCCHN,** squamous cell carcinoma of the head and neck.

Patient characteristics

- Baseline demographics and clinical characteristics of the overall cohort and subgroups are presented in **Table 1**
- In the study population (N=1,010):
  - The majority of patients were male (81.9%)
  - Oropharyngeal cancer was most common (38.5%), and hypopharyngeal cancer was least common (12.9%)
- In the subgroups stratified by treatment intent:
  - Higher rates of definitive nonsurgical treatment were seen in patients with tumors originating in the oropharynx, hypopharynx, or larynx, while patients with oral cavity cancer were more frequently treated with primary resection (see **Supplementary Table 1** for treatment patterns by tumor site)

Table 1. Patient characteristics at baseline.

	All patients (N=1,010)	Primary resection (n=402)	Definitive nonsurgical treatment (n=608)
Age, mean (SD), years	62.5 (9.47)	61.3 (9.44)	63.4 (9.41)
Age categories, n (%)			
≤65 years	647 (64.1)	278 (69.2)	369 (60.7)
>65 years	363 (35.9)	124 (30.8)	239 (39.3)
≤70 years	800 (79.2)	334 (83.1)	466 (76.6)
>70 years	210 (20.8)	68 (16.9)	142 (23.4)
Sex, n (%)			
Male	827 (81.9)	331 (82.3)	496 (81.6)
Female	183 (18.1)	71 (17.7)	112 (18.4)
Comorbidity indices, mean (SD)			
ECI	6.2 (8.38)	5.6 (8.06)	6.7 (8.56)
CCI	2.3 (2.77)	2.1 (2.64)	2.4 (2.84)
Cancer site, n (%)			
Oropharynx	389 (38.5)	134 (33.3)	255 (41.9)
Oral cavity	253 (25.0)	128 (31.8)	125 (20.6)
Larynx	238 (23.6)	94 (23.4)	144 (23.7)
Hypopharynx	130 (12.9)	46 (11.4)	84 (13.8)

CCI, Charlson Comorbidity Index; **ECI,** Elixhauser Comorbidity Index; **SD,** standard deviation.

Treatment patterns

- **Figure 2** presents treatment patterns for the total population
- **Table 2** provides a more granular view on treatment patterns, showing an even distribution of adjuvant CRT and RT in the primary resection group, while the definitive nonsurgical group had a higher proportion of patients treated with CRT
- Cisplatin was the most common systemic index therapy (70.8% of unresected patients and 85.9% of resected patients*), followed by cetuximab in 7.6% of resected and 19.5% of unresected patients

Figure 2. Treatment patterns for all patients.

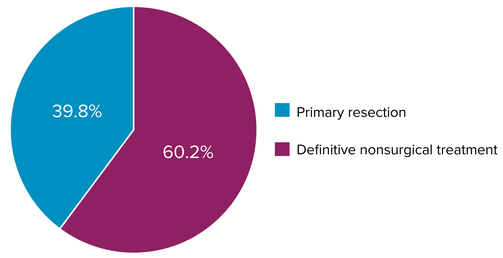


Table 2. Treatment patterns by treatment intent.

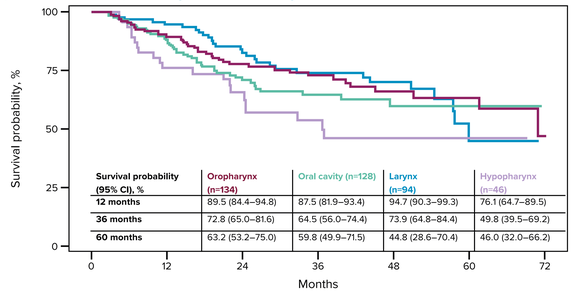
Primary resection (n=402)	n (%)	Definitive nonsurgical treatment (n=608)	n (%)
Surgery followed by CRT	192 (47.8)	CRT	347 (57.1)
Surgery followed by RT	192 (47.8)	RT alone	199 (32.7)
Surgery followed by other treatment combinations†	18 (4.5)	Other treatment combinations‡	62 (10.2)

CRT, chemoradiotherapy; **RT,** radiotherapy.
*The exact systemic treatment could only be identified in 246 patients in the secondary care setting, as systemic treatments in hospitals are captured as a lump sum for invoicing purposes in Germany.
†Includes surgery followed by RT and systemic therapy, surgery followed by systemic therapy and RT, surgery followed by systemic therapy, systemic therapy followed by surgery and RT.
‡Includes systemic therapy followed by RT, RT followed by systemic therapy, RT followed by surgery, CRT followed by surgery.

Survival outcomes

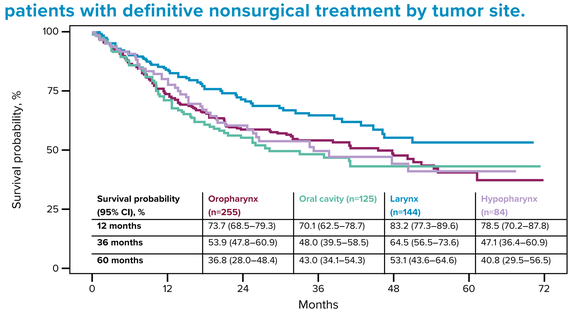
- Kaplan-Meier estimates of OS by tumor site in patients with primary resection and patients who received definitive nonsurgical treatment are presented in **Figure 3** and **Figure 4**, respectively
- 1-, 3-, and 5-year OS rates for the overall population and by treatment intent are reported in **Supplementary Table 2**

Figure 3. Survival probability from start of index therapy in patients with primary resection by tumor site.



Survival probability (95% CI), %	Oropharynx (n=134)	Oral cavity (n=128)	Larynx (n=94)	Hypopharynx (n=46)
12 months	89.5 (84.4–94.8)	87.5 (81.9–93.4)	94.7 (90.3–99.3)	76.1 (64.7–89.5)
36 months	72.8 (65.0–81.6)	64.5 (56.0–74.4)	73.9 (64.8–84.4)	49.8 (39.5–69.2)
60 months	63.2 (53.2–75.0)	59.8 (49.9–71.5)	44.8 (28.6–70.4)	46.0 (32.0–66.2)

Figure 4. Survival probability from start of index therapy in patients with definitive nonsurgical treatment by tumor site.



Survival probability (95% CI), %	Oropharynx (n=255)	Oral cavity (n=125)	Larynx (n=144)	Hypopharynx (n=84)
12 months	73.7 (68.5–79.3)	70.1 (62.5–78.7)	83.2 (77.3–89.6)	78.5 (70.2–87.8)
36 months	53.9 (47.8–60.9)	48.0 (39.5–58.5)	64.5 (56.5–73.6)	47.1 (36.4–60.9)
60 months	36.8 (28.0–48.4)	43.0 (34.1–54.3)	53.1 (43.6–64.6)	40.8 (29.5–56.5)

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Supplementary Material (via QR code)

Supplementary Table 1. Treatment patterns by tumor site.

Treatment intent, n (%)	Oral cavity	Oropharynx	Hypopharynx	Larynx
Primary resection	128 (50.6)	134 (34.4)	46 (35.4)	94 (39.5)
Definitive nonsurgical treatment	125 (49.4)	255 (65.5)	84 (64.6)	144 (60.5)
Total N	**253**	**389**	**130**	**238**

Supplementary Table 2. Survival rates by treatment intent.

Survival probability (95% CI), %	All patients (N=1,010)	Primary resection (n=402)	Definitive nonsurgical treatment (n=608)
12 months	81.2 (78.9–87.7)	88.5 (85.5–91.7)	76.2 (72.9–79.7)
36 months	60.0 (56.8–63.4)	68.2 (63.4–73.4)	54.6 (50.5–59.1)
60 months	48.5 (44.4–53.1)	55.8 (48.8–63.7)	43.8 (38.9–49.4)