Treatment patterns, indicators of receiving systemic treatment, and clinical outcomes in metastatic urothelial carcinoma: a retrospective analysis of real-world data in Germany

G. Niegisch,¹ M.-O. Grimm,² F. Hardtstock,³ J. Krieger,³ A. Starry,³ U. Osowski,⁴ S. Guenther,⁵ **B. Deiters,⁶ U. Maywald**,⁷ **T. Wilke**,⁸ **M. Kearney⁵**

¹University Hospital and Medical Faculty of the Heinrich-Heine-University, Düsseldorf, Germany; ²Universitätsklinikum Jena, Jena, Germany; ³Cytel, Berlin, Germany; ⁴Merck Healthcare Germany GmbH, Weiterstadt, Germany, an affiliate of Merck KGaA, Darmstadt, Germany; ⁵the healthcare business of Merck KGaA, Darmstadt, Germany; ⁶GWQ ServicePlus AG, Düsseldorf, Germany; ⁷AOK PLUS, Dresden, Germany; ⁸IPAM e.V., Wismar, Germany

SCOPE



 This retrospective claims data study characterized real-world treatment patterns, treatment rates, and clinical outcomes in patients with metastatic urothelial carcinoma (mUC) in Germany and assessed factors associated with receiving treatment

CONCLUSIONS



- This study describes real-world treatment patterns, treatment rates, and clinical outcomes in German patients with mUC from 2015-2020 and highlights that the majority received no systemic treatment within the first 12 months, despite a positive trend in first-line (1L) treatment utilization rates over time
- Treated patients were more likely to be younger and male and to have fewer comorbidities than untreated patients
- Receiving systemic treatment was associated with longer overall survival (OS); among treated patients, OS was longer in those receiving 1L platinum-based chemotherapy (PBC) than in those receiving other 1L treatment
- Future research should explore the unmet need in untreated patients to confirm alignment with updated treatment guidelines and newer standards of care

GET POSTER PDF

Copies of this poster obtained through Quick Response (QR) Code are for personal use only and may not be reproduced without permission from ASCO[®] or the author of this poster. Per ASCO requirements you will be redirected to the ASCO meeting site. Correspondence: Guenter Niegisch, Guenter.Niegisch@med.uni-duesseldorf.de

 . References a lanuary 25, 2023. https://uroweb.org/guidelines/muscle-invasive-and-metastatic-bladder-cancer 3. Fisher MD, et al. J Med Econ. 2019;22(7):662-70. 5. Cheeseman S, et al. J Med Econ. 2019;22(7):662-70. 5. Cheeseman S, et al. J Med Econ. 2019;22(7):662-70. 5. Cheeseman S, et al. J Med Econ. 2018;16(6):e1171-9. 4. Aly A, et al. J Med Econ. 2018;16(6):e1171-9. 4. Aly A, et al. J Med Econ. 2018;2(7):662-70. 5. Cheeseman S, et al. J Med Econ. 2019;22(7):662-70. 5. Cheeseman S, et al. J Med Econ. 2018;16(6):e1171-9. 4. Aly A, et al. J Med Econ. 2018;16(6):e1171-9. 4. Aly A, et al. J Med Econ. 2018;2(7):662-70. 5. Cheeseman S, et al. J Med Econ. 2019;22(7):662-70. 5. Cheeseman S, et al. J Med Econ. 2018;16(6):e1171-9. 4. Aly A, et al. J Med Econ. 2018;16(6):e1171-9. 4. Aly A, et al. J Med Econ. 2018;2(7):662-70. 5. Cheeseman S, et al. J Med Econ. 2018;2(7):662-70. 5. Cheeseman S, et al. J Med Econ. 2018;16(6):e1171-9. 4. Aly A, et al. J Med Econ. 2018;2(7):662-70. 5. Cheeseman S, et al. J Med Econ. 2018;2(7):662-70. the healthcare business of Merck KGaA, Darmstadt, Germany and Pfizer. Editorial support was provided by the healthcare business of Merck KGaA, Darmstadt, Germany and Pfizer. Editorial support was provided by the healthcare business of Merck KGaA, Darmstadt, Germany and Pfizer.



BACKGROUND

- Urothelial carcinoma (UC) accounts for 90% of bladder cancer cases and is one of Germany's most commonly observed cancers^{1,2}
- Approximately 11% of patients with UC have advanced or metastatic disease at diagnosis.¹ The prognosis at this stage is poor, with the median OS time being around 4 months if left untreated^{3,4}
- As improved OS was observed previously in patients receiving PBC, guidelines recommend PBC as 1L treatment for eligible patients.⁵⁻⁷ Additionally, non–PBC is considered in patients who cannot tolerate PBC^{2,7}
- In recent years, approval of checkpoint inhibitor immunotherapy (IO) agents as 1L and second-line treatment in patients with locally advanced or metastatic UC has transformed the treatment landscape
- Thus, this study investigated treatment patterns, clinical outcomes, and treatment indicators in patients with mUC, including recent data on IO agents

RESULTS

- The study included 3,226 patients with mUC, with a mean (SD) follow-up of 13.8 (16.1) months. The mean (SD) age was 73.8 (10.8) years, 70.8% were male, and the mean (SD) Elixhauser Comorbidity score was 17.6 (11.4) (Table 1)
- Overall, 1,286 patients (39.9%) received systemic treatment in the first-year post index and PBC was the most common 1L treatment (N=825, 64.2%), followed by non–PBC (N=322, 25.0%) and IO (N=139, 10.8%) (Figure 2)
- Over time, the share of patients receiving 1L treatment increased (2015, 35.3%; 2019, 45.4%) (**Figure 3**)
- Multiple factors were associated with a higher likelihood of receiving 1L treatment: younger age (odds ratio, 0.93), male sex (odds ratio, 0.83), lower comorbidity score (odds ratio, 0.97), previous UC-related interventions (odds ratio, 1.65), lower number of previous hospitalization visits (odds ratio, 0.97), inpatient diagnosis of mUC (odds ratio, 1.28), and a more recent mUC diagnosis (odds ratio, 1.11) (**Table 2**)
- The median OS from index diagnosis was 10.2-10.7 months longer in the treated vs untreated cohort (treated: AOK PLUS, 13.7 months and GWQ, 13.8; untreated: AOK PLUS, 3.0 and GWQ, 3.6). The median OS after 1L initiation was longest in the PBC subcohort (AOK PLUS, 12.9 months and GWQ, 13.8), followed by the non–PBC subcohort (AOK PLUS, 11.2 months and GWQ, 6.5) and the IO subcohort (AOK PLUS, 4.1 months and GWQ, 8.2) (Table 3, Figures 4 and 5)

Table 1. Patient characteristics and comorbidities

	Main cohort N=3,226	Untreated cohort N=1,892	Treated cohort N=1,286	PBC cohort N=825	IO cohort N=139	Non–PE cohort N=322
Age, mean (SD), years	73.82 (10.83)	77.30 (9.79)	68.79 (10.37)	66.88 (10.51)	72.74 (9.96)	71.97 (8.79)
Male/female, %	70.77/ 29.23	68.66/ 31.34	74.03/ 25.97	73.70/ 26.30	56.12/ 43.88	75.78/ 24.22

Charlson Comorbidity Index score (24-month BL)

Mean (SD)	6.27 (3.78)	6.79 (3.86)	5.53 (3.53)	5.11 (3.38)	6.53 (3.68)	
Median (min-max)	6 (0-19)	6 (0-19)	5 (0-18)	4 (0-18)	6 (0-16)	

Elixhauser Comorbidity Index score (24-month BL)

BL, baseline; **IO**, immunotherapy; **max**, maximum; **min**, minimum; **PBC**, platinum-based chemotherapy.

Mean (SD)	17.59 (11.40)	19.25 (11.57)	15.21 (10.74)	13.76 (10.28)	18.97 (11.83)	
Median (min-max)	16 (-7 to 66)	18 (-7 to 66)	14 (-3 to 53)	11 (-3 to 48)	17 (-3 to 53)	
Observational period, mean (SD), months	13.81 (16.12)	10.61 (15.95)	17.91 (15.31)	19.64 (11.96)	12.80 (9.93)	

METHODS

- Using 2 statutory health insurance (AOK PLUS and GWQ) claims databases (2013-2020, \approx 8 million insured in Germany), adults with an incident mUC diagnosis (International Statistical Classification of Diseases, Tenth Revision C65-C68 and C77-C79) from 2015-2019 were identified. Those with other malignant tumors (lung C34, colon C18, rectosigmoid junction C19, rectum C20) were excluded (**Figure 1**)
- Patients were observed for ≥ 12 months after the incident mUC diagnosis (index) or until death. Treated patients were delineated into 3 groups based on 1L systemic treatment received: PBC, non–PBC, and IO
- Patient characteristics were analyzed descriptively. Multivariable logistic regression was used to identify factors associated with receiving systemic treatment. OS was calculated from 1L initiation by Kaplan-Meier estimation. All analyses (except for Kaplan-Meier estimations) were performed separately for each database, with results being first combined using meta-analysis methods and then presented in aggregate form



Figure 3. Proportion of patients receiving systemic treatment according to index year



IO, immunotherapy: PBC, platinum-based chemothera

Table 2. Indicators for receiving systemic treatment based on a multivariable logistic regression (treated vs untreated cohort)

	Odds ratio	Standard error	95% CI	p value
Index year (reference year, 2015; categorical)	1.11	0.03	1.05-1.17	<0.001
Age at index (continuous)	0.93	0.01	0.92-0.94	<0.001
Sex (female; dummy)	0.83	0.16	0.69-0.98	0.032
Charlson Comorbidity Index (24-month BL; continuous)	0.97	0.01	0.93-1.00	0.011
Previous UC-related treatments, surgeries, and interventions (24-month BL; dummy)	1.65	0.12	1.37-2.00	<0.001
Diagnostic setting (outpatient, compared with inpatient; dummy)	1.28	0.11	1.05-1.54	0.013
Number of hospitalizations (24-month BL; continuous)	0.97	0.02	0.94-1.00	0.027
Previous primary malignant carcinomas (24-month BL; dummy)	1.10	0.12	0.92-1.31	0.317
Number of outpatient visits (24-month BL; continuous)	1.01	0.01	1.00-1.01	0.162



UC, urothelial carcinoma.

Table 3. OS outcomes by type of 1L systemic treatment

		Main cohort N=3,226	Untreated cohort N=1,892	Treated cohort N=1,286	PBC cohort N=825	IO cohort N=139	Non–PBC cohort N=322
Median OS from mUC index (IQR), months	AOK PLUS	5.92 (1.84-19.13)	3.02 (1.18-10.78)	13.74 (6.81-32.91)			_
	GWQ	9.07 (2.53-31.23)	3.55 (1.18-18.84)	13.81 (7.07-41.69)			
Median OS from 1L systemic treatment initiation (IQR), monthsAOK PLUGWQ	AOK PLUS			11.61 (4.90-31.53)	12.89 (6.21-33.11)	4.11 (1.78-14.14)	11.18 (4.41-36.00)
	GWQ			11.67 (5.06-37.55)	13.8 (7.43-49.35)	8.19 (2.76-NE)	6.54 (2.60-15.48)
mmortal time bias may slightly confound the results but not the general trend. Data for patients with mUC with delayed treatment are not shown due to the small number of patients in this subgroup. 11. first line: 10. immunotherapy: mUC, metastatic urothelial carcinoma: NE, not estimable: OS, overall survival: PBC, platinum-based chemotherapy.							

Figure 4. Kaplan-Meier curves: OS in the treated and untreated cohorts (AOK PLUS)





Figure 5. Kaplan-Meier curves: OS in the treated and untreated cohorts (GWQ)

Immortal time bias may slightly confound the results but not the general trend. **OS**, overall survival.