Factors associated with not receiving systemic treatment in patients with metastatic urothelial carcinoma: results of a retrospective study in Germany

M.-O. Grimm, T. Wilke, D. Kardou, E. Hame, A. Methel, B. Böhme, J. Herrmann, M. Kes, H. Stelzer, C. Weinhold

A RETROSPECTIVE STUDY

BACKGROUND

• UC constitutes 9% of bladder cancer cases and is one of Germany’s most observed malignancies.1

• Approximately, 30,000 patients in Germany were newly diagnosed with UC in 2019, with 11% diagnosed at an advanced or metastatic stage.2

• Real-world research has shown significant differences in systemic anticancer treatment among patients with mUC.3

• This retrospective real-world study examined factors and outcomes associated with the receipt or nonreceipt of systemic anticancer treatment in patients with mUC.

METHODS

• The study used the AOK PLUS and GWH Germany health insurance databases.

• Analyses were performed separately for each database, with results first combined (Supplementary Table 1).

• Multivariable logistic regression and various methods of cluster analysis were used to inform the results.4

RESULTS

Patient demographics

• The 1,212 patients with mUC 70.8% were male, median [SD] age was 73.0 (10.8) years, and median [SD] Charlson Comorbidity Index (CCI) score was 6.0 (3.6), and mean [SD] Blaschko Comorbidity Index score was 1.7 (1.3) (Supplementary Table 2).

• A total of 1,197 patients (99.5%) received systemic anticancer treatment (Supplementary Table 2).

Clinical outcomes

• Median OS from diagnosis was notably shorter in untreated vs treated patients (AOK PLUS: 34.0 vs 13.9 months; GWH: 3.6 vs 13.8 months, respectively) (Table 1).

• Untreated patients were substantially older, had more comorbidities, and a higher CCI score. The median [SD] age in treated patients was 69.4 (10.7) years vs 81.5 (10.6) years, and the median [SD] CCI score was 6.8 (3.9) vs 5.5 (3.5), coren 37.5% vs 11.0%, respectively (Table 1).

• A multivariate regression analysis revealed that a higher likelihood of not receiving treatment was associated with older age, a higher CCI score, no prior UC-related surgery, systemic or nonsystemic treatment, implantable mUC disease, more comorbidities in the baseline, female sex, and being diagnosed in 2015 vs 2019 (Table 2).

• Potential confounders to the administration of systemic anticancer treatment at baseline were presented in Table 3.

• Among UC-related treatments at baseline, only 1 case was recorded for radiotherapy (Table 4).

Statistical analyses

• Patient characteristics were analyzed descriptively. Overall survival (OS) from diagnosis was calculated using Kaplan-Meier estimation, and a multivariate analysis to identify risk factors for systemic anticancer treatment receipt as the dependent variable was performed. Cross variables associated with receiving first-line systemic anticancer treatment were analyzed separately for each database, with results first combined using meta-analysis methods and then presented in aggregate form (Table 2).

• Clustering techniques

• After identifying outliers (AOK PLUS, n=22; GWH, n=24), and patient clusters, the standard deviation of OS at 50% of the distribution, indicated a 2-cluster solution for both databases.

• Clusters with the highest proportion of untreated patients (AOK PLUS: 87.2% vs 12.8% in treated cluster; GWH: 60.0% vs 40.0% in treated cluster) also had the highest proportion of patients who were older (AOK PLUS: 81.9% vs 73.7% years) and had higher CCI scores (AOK PLUS: 7.3 vs 5.9 in treated cluster; GWH with a CCI score of 7 vs 3) (Figures 1 and 2).

• We were more likely to receive their index diagnosis in another clinician’s setting (38.1% vs 23.2% of patients) and were less likely to undergo biopsy (10.4% vs 6.0%) respectively, observed in A mixed clustering, data not shown.

Limitations

• The administrative claims data used were designed for billing purposes, which may lead to measurement errors due to coding inaccuracies.

• The AOK PLUS and GWH databases contain information from routine medical practice but lack valuable clinical data, such as vital signs or laboratory test results, that could potentially strengthen the analyses.

• Due to database regulations in Germany and data accessibility, the AOK PLUS and GWH cohort analyses were performed independently. Results, except for Kaplan-Meier estimations, were first combined using meta-analysis methods and then presented in aggregate form.

• Claims data may not capture all relevant aspects of a patient’s medical history. Thus, the accuracy of cluster assignments may have been impacted, and important associations may have been overlooked.

• The optimal number of clusters can be subjective; different clustering methods or criteria may yield varying cluster solutions, making it challenging to determine the correct number of clusters.

DISCLOSURES

• Guillie is an employee of and holds stock and other ownership interests in Merck.


• Kearney M, et al. Future Oncol. Published online August 1, 2023.
