

Healthcare resource utilization and related direct healthcare costs for patients with metastatic urothelial cancer: findings from a retrospective observational cohort study in a clinical practice setting in Italy

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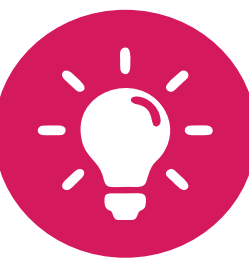
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SCOPE



- This observational, retrospective cohort study describes healthcare resource utilization and direct healthcare costs of patients with metastatic urothelial cancer (mUC) who received or did not receive systemic chemotherapy and/or radiotherapy in the inpatient setting in Italy
- Another poster (poster no. CO20) describes the related demographics, clinical characteristics, and predictive factors associated with a lower likelihood of receiving inpatient chemotherapy and/or radiotherapy¹

CONCLUSIONS



- Our real-world study findings indicate a large economic burden of mUC in Italy, despite a high rate of nontreatment. Findings highlight the need to better identify the reasons for undertreatment and to effectively use available therapies to alleviate care disparities
- Additional research is needed to determine whether treatment rates will improve with the addition of newer agents to the mUC treatment landscape

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BACKGROUND

- Bladder cancer is the tenth most commonly diagnosed cancer globally, with urothelial cancer (UC) accounting for almost 90% of all cases^{2,3}
- In 2022 in Italy, there were 313,600 cases of bladder cancer, and approximately 29,200 new diagnoses were estimated⁴
- Approximately 20% of patients with UC present with surgically unresectable or de novo mUC⁵
- The survival rate is poor, with median survival of 3-6 months if left untreated⁶
- Use of immune checkpoint inhibitors as first-line treatment, first-line maintenance, and second-line treatment for patients with locally advanced or mUC has brought about significant changes in treatment strategy⁷

- Data from 2016 in Italy showed a median annual direct cost of €4,700 per patient with mUC (covering outpatient, inpatient, emergency care, pharmaceuticals, and follow-up procedures), and the national estimated annual direct cost was €54,016,898 for incident disease⁸
- In this rapidly evolving treatment landscape, understanding the economic burden of systemic therapy is of utmost importance in the management of patients with mUC and in alleviating care disparities

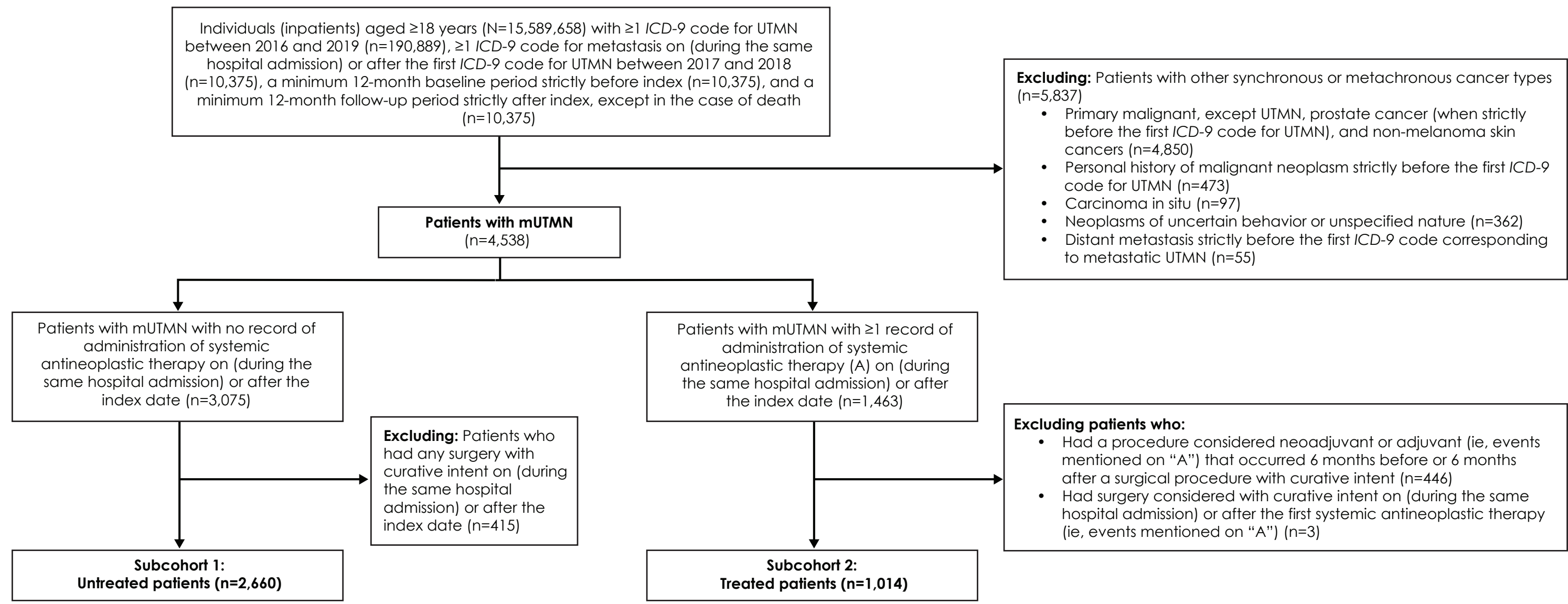
METHODS

- This retrospective, observational analysis used the nationwide hospital discharge database (Scheda di Dimissione Ospedaliera) for the main part, plus a regional database from Umbrian Local Health Unit 2 (in- and outpatient settings) for the national projected costs only
- Incident adult (age ≥18 years) patients with a first hospitalization for mUC (index) between 2017 and 2018 (baseline period: 2016; follow-up: 2019), identified by a combination of *International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM)*, medical procedure, and diagnosis-related group codes, were included
- Results were analyzed descriptively, and healthcare costs were projected at a national level

RESULTS

- A total of 3,674 patients with mUC were identified, of whom 27.6% were treated with inpatient chemotherapy and/or radiotherapy, and 72.4% were not treated with either (**Figure 1**)
- A total of 1,715 (46.7%) had ≥1 all-cause (re)hospitalization (post index): 79.4% of treated and 34.2% of untreated patients (**Table 1**)
- Mean (SD) number of (re)hospitalizations post index hospitalization was 2.5 (2.6) in treated and 0.6 (1.2) in untreated patients (**Table 1**)
- Mean (SD) cumulative length of stay was 14.7 (18.5) and 5.6 (12.6) days in the treated and untreated groups, respectively (**Table 1**)
- Mean (SD) costs per patient of index hospital admission were €4,020 (€3,118) in treated and €4,588 (€3,322) in untreated patients (**Table 2**)
- Monthly mean (SD) cumulative inpatient costs per treated patient peaked at €5,004 (€3,593) during the first month (covering index hospitalization) and more than doubled after 36 months of follow-up (€11,734 [€8,788]) (**Figure 2**)
- Estimated national projected costs for the entire follow-up period from first hospitalization for mUC were €34.3 million (95% CI, €30.3-€60.0 million) and for 1-year of follow-up were €31.8 million (95% CI, €28.1-€56.0 million) (**Table 3**)

Figure 1. Patient flowchart of cohort definition (SDO)



ICD-9, International Classification of Diseases, Ninth Revision; mUTMN, metastatic urinary tract malignant neoplasm; SDO, Scheda di Dimissione Ospedaliera.

Table 1. Number of hospitalizations and cumulative length of stay per patient (SDO)

		Total population (N=3,674)	Treated (n=1,014)	Untreated (n=2,660)
No. of (re)hospitalizations per patient post index hospitalization				
No. of hospitalizations during the entire follow-up	Mean (SD)	1.1 (1.9)	2.5 (2.6)	0.6 (1.2)
	Median (Q1; Q3)	0 (0; 2.0)	2.0 (1.0; 3.0)	0 (0; 1.0)
	Range	0-22.0	0-22.0	0-15.0
Length of stay, days				
Cumulative length of stay per patient	Mean (SD)	8.1 (15.0)	14.7 (18.5)	5.6 (12.6)
	Median (Q1; Q3)	0 (0; 11.0)	9.0 (1.0; 22.0)	0 (0; 5.3)
	Range	0-175.0	0-175.0	0-143.0

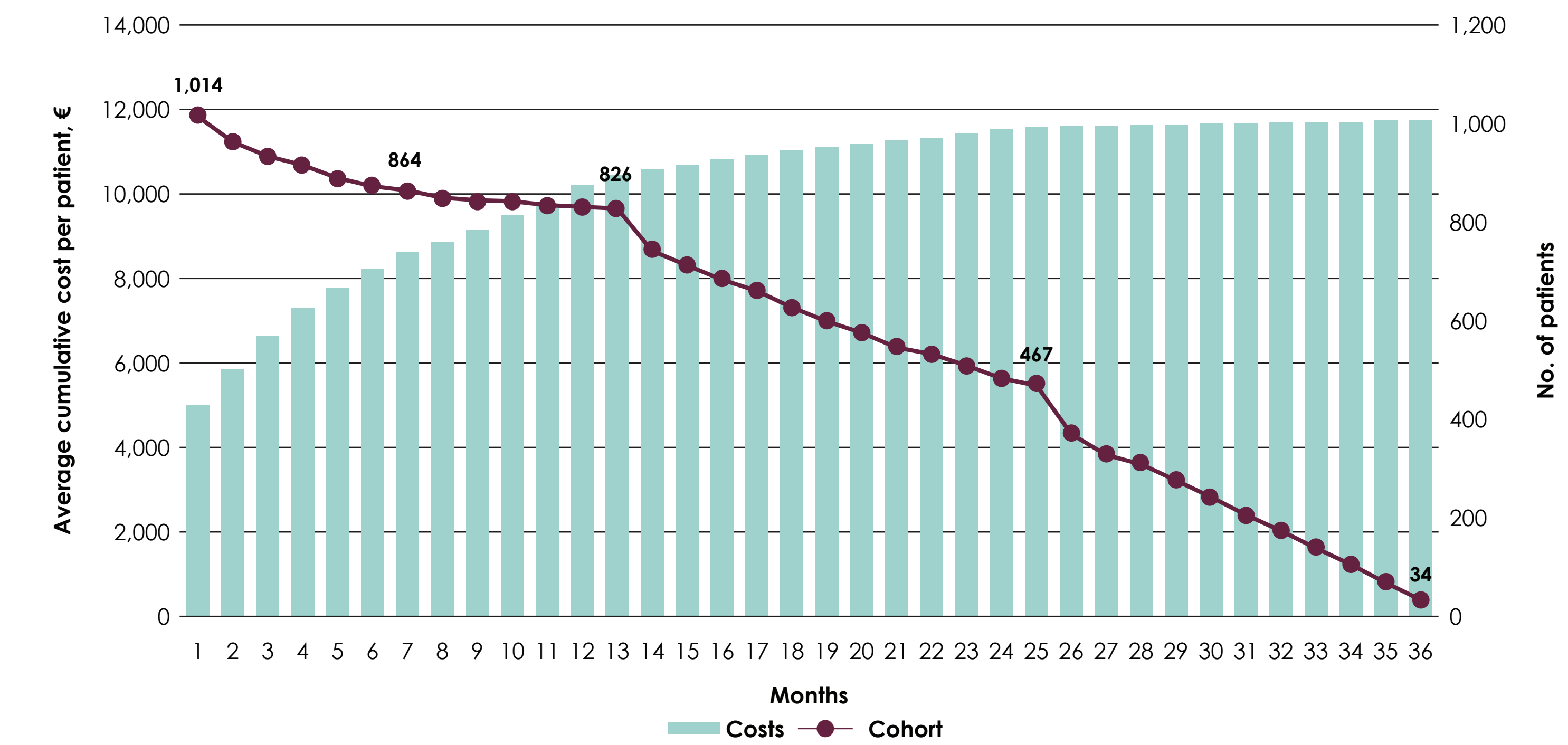
Q, quartile; SDO, Scheda di Dimissione Ospedaliera.

Table 2. Costs per patient of the index hospital admission (SDO)

		Total population (N=3,674)	Treated (n=1,014)	Untreated (n=2,660)
Costs per patient of the index hospital admission, €				
Index event costs	Mean (SD)	4,431 (3,277)	4,020 (3,118)	4,588 (3,322)
	Median (Q1; Q3)	4,006 (2,870; 4,693)	3,649 (1,792; 4,867)	4,006 (3,290; 4,550)
	Range	134-51,919	134-34,546	134-51,919

Q, quartile; SDO, Scheda di Dimissione Ospedaliera.

Figure 2. Monthly mean cumulative inpatient costs per treated patient (SDO)



SDO, Scheda di Dimissione Ospedaliera.

Table 3. Estimated national projected costs in the in- and outpatient settings (SDO + LHU-Umbria-2)

Category	1-year follow-up (including index hospitalization)		Entire follow-up period (including index hospitalization)	
	Estimate, €	95% CI, €	Estimate, €	95% CI, €
Male, aged 18-74 years	13,262,893	11,739,553-25,621,268	14,667,007	13,012,434-27,788,850
Male, aged ≥75 years	10,890,792	9,434,970-19,718,149	11,494,542	9,994,379-20,887,025
Female, aged 18-74 years	4,471,181	3,827,070-5,661,743	4,849,742	4,110,136-6,256,231
Female, aged ≥75 years	3,173,860	3,071,176-4,981,148	3,310,338	3,207,066-5,117,038
Male	24,153,685	21,174,523-45,339,417	26,161,549	23,006,813-48,675,875
Female	7,645,041	6,898,246-10,642,891	8,160,080	7,317,202-11,373,269
Overall	31,798,726	28,072,769-55,982,308	34,321,629	30,324,015-60,049,144

LHU-Umbria-2, Umbrian Local Health Unit 2; SDO, Scheda di Dimissione Ospedaliera.

LIMITATIONS

- There is a minor risk of misclassification of disease status, as no data on the classification of malignant tumors are available in Italian claims data. Therefore, a proxy (based on ICD-9 codes provided by clinicians treating patients with mUC) was used to identify patients with mUC. The risk of other concomitant cancers was also addressed via an ICD-9-based proxy to exclude patients with other primary synchronous or metachronous cancers (except prostate cancer, if before UC, and nonmelanoma skin cancer)
- Other limitations of this analysis include a lack of clinical outcome measures (common with administrative claims databases), resulting in the treated and untreated populations being defined using the presence or absence of a reimbursed claim for administration of chemotherapy or radiotherapy in the inpatient setting (ie, systemic therapy). Claims for drug dispensation were not considered
- This study did not include patients with mUC who were diagnosed or treated in the outpatient setting or patients who were never hospitalized for mUC
- This study did not assess indirect financial and social costs in patients with mUC