RWD169

Resource utilization of different remission and relapse profiles in chronic urticaria – results from PREDICT-CSU real-world study in the United States

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Introduction and objective

- The clinical course of CU includes active disease, clinical remission/symptom resolution, and relapse[1–3]
- Uncertainty exists regarding the extent to which patients with comparable clinical remission and relapse patterns, share similar healthcare resource utilization (HRU)
- The objective of this study was to quantify HRU by different remission and relapse profiles of CU

Methods

- Patients diagnosed with CU were identified using data from Optum Life Science electronic health records (Q1 2007–Q2 2019) in the United States based on ≥2 ICD 9/10 codes or related therapies ≥6 weeks apart
- **Clinical remission** was defined as ≥12 months free of CU diagnosis and/or related treatment and
- **Relapse** was defined as a CU diagnosis and/or CU-related treatment observed after a period of clinical remission of ≥12 months
- A data-driven clustering algorithm was used to group patients based on clinical remission and relapse characteristics
- Different cluster configurations (i.e., different combinations of clinical remission and relapse variables and their corresponding cutoff values) were systematically tested
- The optimal cluster configuration was defined as that which maximized intra-cluster similarity and inter-cluster dissimilarity on variables related to key disease characteristics
- The clusters were further characterized by burden of HRU in terms of any healthcare provider visits and CU-related prescriptions 12-month post-CU diagnosis and reported per-person-per-year (PPPY)

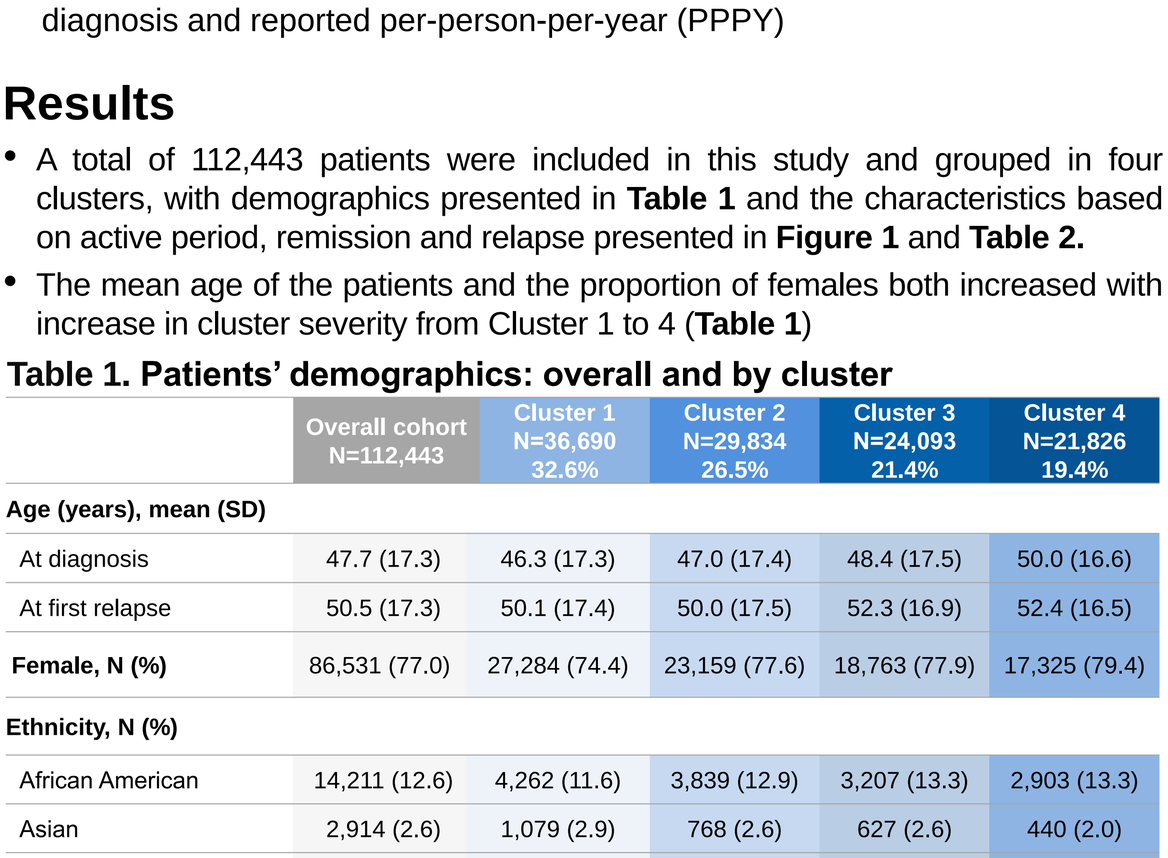
Results

- A total of 112,443 patients were included in this study and grouped in four clusters, with demographics presented in **Table 1** and the characteristics based on active period, remission and relapse presented in **Figure 1** and **Table 2.**
- The mean age of the patients and the proportion of females both increased with increase in cluster severity from Cluster 1 to 4 (**Table 1**)

Table 1. Patients' demographics: overall and by cluster

	Overall cohort N=112,443	Cluster 1 N=36,690 32.6%	Cluster 2 N=29,834 26.5%	Cluster 3 N=24,093 21.4%	Cluster 4 N=21,826 19.4%
Age (years), mean (SD)					
At diagnosis	47.7 (17.3)	46.3 (17.3)	47.0 (17.4)	48.4 (17.5)	50.0 (16.6)
At first relapse	50.5 (17.3)	50.1 (17.4)	50.0 (17.5)	52.3 (16.9)	52.4 (16.5)
Female, N (%)	86,531 (77.0)	27,284 (74.4)	23,159 (77.6)	18,763 (77.9)	17,325 (79.4)
Ethnicity, N (%)					
African American	14,211 (12.6)	4,262 (11.6)	3,839 (12.9)	3,207 (13.3)	2,903 (13.3)
Asian	2,914 (2.6)	1,079 (2.9)	768 (2.6)	627 (2.6)	440 (2.0)
Caucasian	88,111 (78.4)	28,949 (78.9)	23,334 (78.2)	18,664 (77.5)	17,164 (78.6)
Other/Unknown	7,207 (6.4)	2,400 (6.5)	1,893 (6.3)	1,595 (6.6)	1,319 (6.0)
Time from first symptom to index date (days), mean (SD)	74.2 (111.2)	59.7 (101.8)	70.3 (109.3)	76.7 (113.1)	96.5 (120.0)

Figure 1. Cluster characteristics by active period, remission and relapse



Index date: Date of first CU diagnosis following a 12-month baseline period free of CU
Relapse rate: Proportion of patients who relapsed among those who reached remission

Table 2: Cluster definitions representing patient-personas

	Active CU periods	Remission*	Relapse
Cluster 1	Limited	Earliest, longest	Uncommon
Cluster 2	Limited, longer	Delayed, shorter	Common
Cluster 3	Prolonged	Most delayed, shortest	Very common
Cluster 4	Prolonged, visit-intense	Most delayed, shortest	Very common

*Includes duration and intensity

Table 3. Newly diagnosed comorbidities: overall and by clusters

Comorbidity (%)	Overall cohort	Cluster 1	Cluster 2	Cluster 3	Cluster 4
Allergic rhinitis	17.5	15.5	17.3	17.7	20.9
Chronic pulmonary disease	13.0	10.8	13.4	13.6	15.7
Depression	10.5	8.7	10.4	10.7	13.2
Asthma	9.4	7.4	9.2	10.0	12.3
Malignancy	4.3	3.4	4.2	4.8	5.5
Mild to moderate diabetes	3.7	3.0	3.5	3.7	4.9

- The proportion of patients with newly diagnosed comorbidities, including allergic rhinitis, chronic pulmonary disease, depression, increased from Clusters 1 to 4 (**Table 3**)
- The mean number of healthcare provider visits (**Figure 2**) and number of prescriptions (**Figure 3**) also increased from Cluster 1 to 4

Figure 2. Healthcare provider visits (first 12-month post-index)

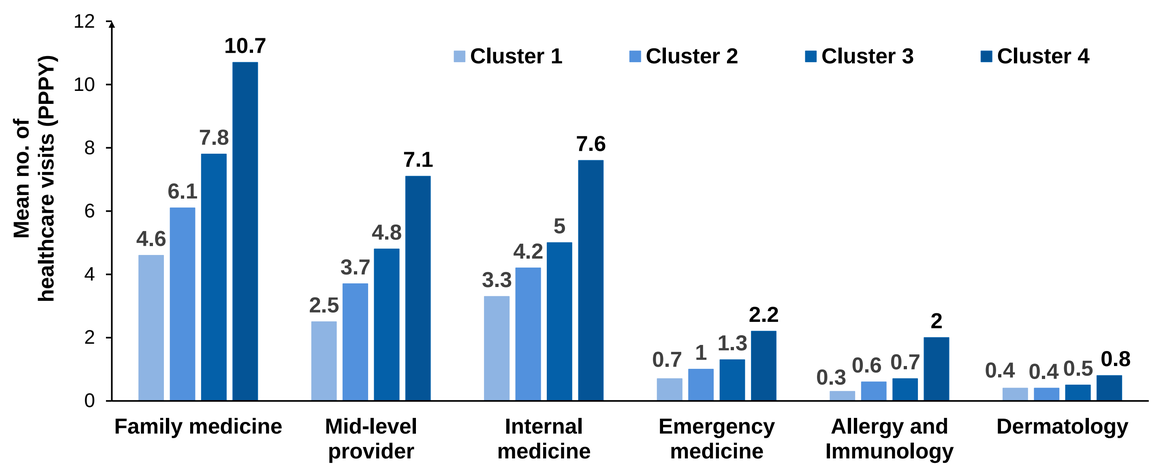
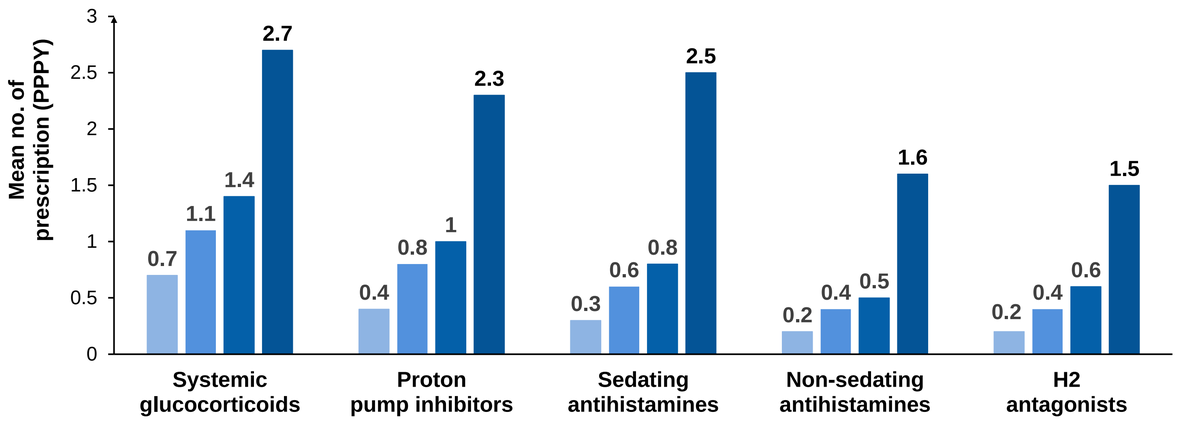


Figure 3. Prescriptions during follow-up



Conclusion

- The overall burden of CU increased with cluster severity as shown by increased % of comorbidities, more frequent healthcare provider visits and higher rate of prescriptions
- The findings of this study suggest that a model could be developed to predict patients with longer disease, higher risk of relapse, and higher disease burden that could support personalized disease management decisions

References

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