HEALTHCARE RESOURCE UTILIZATION AMONG SYSTEMIC LUPUS ERYTHEMATOSUS PATIENTS IN THE UNITED STATES

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BACKGROUND

- Systemic lupus erythematosus (SLE) is a chronic immune-mediated disorder that requires continuing medical care, which results in significant healthcare utilization and costs.[1,2]
- Despite undergoing treatment with hydroxychloroquine and immunosuppressive agents, managing SLE remains a formidable challenge, as many patients suffer from recurrent flares and complications throughout their lifetime.[2,3]
- The healthcare utilization burden of SLE care is substantial to the patients and healthcare systems, since the progressive nature of SLE and worsening symptoms require increase in the resource utilization over time.
- SLE patients often require care from multiple specialties, including rheumatology, and nephrology, which can further increase healthcare costs and utilization.
- A precise assessment of healthcare resource use and economic burden of SLE is essential for healthcare sectors to effectively allocate limited resources as well as to further improve overall patient outcomes.

OBJECTIVE

- The aim of this study is to assess the resource utilization (HCRU) and healthcare costs among SLE patients in the U.S.

METHOD

- A retrospective cohort study was performed using the MarketScan Commercial Claims and Medicare Supplemental Databases.
- Patients initiating hydroxychloroquine or belimumab therapy between April 1, 2016, to June 30, 2019 were included. To be eligible for the analysis, subject should have at least 6months of continuous enrollment both before and after the first hydroxychloroquine or belimumab dispensing (index date).
- Therapy indicated for SLE was confirmed by at least one SLE diagnosis (ICD-10-CM M32) within 180days before index date (baseline period). Patients should have at least two diagnosis claims of SLE that are spaced 60 to 365 days apart.
- We assessed baseline clinical characteristics including Charlson Comorbidity Index (CCI), hypertension, hyperlipidemia, obesity, cerebrovascular diseases, thrombosis, renal disease, chronic obstructive pulmonary disease, hypothyroidism, osteoarthritis, osteoporosis, fibromyalgia, depression, polyneuropathy, solid tumor, and metastatic cancer.[4]
- Patients were followed until disenrollment or end of study period (December 2019). All cause outpatient office visits, emergency department admissions, and inpatient admissions were the outcomes of interest.
- We calculated per-patient per month (PPPM) healthcare cost adjudicated by all-cause pharmacy claims, emergency department visits, outpatient office visits, and inpatients admission. Cost analysis was conducted using 2016-2018 data only due to the limited data availability.
- All costs were inflated to December 2019 U.S. dollars using the Medical Care component of the Consumer Price Index.[5]

Table 1: Patient Demographics and Characteristics

Characteristics	
N	8,449
Age, median (q1, q3)	46 (36, 55)
Age category, years (%)	
<18	177 (2.09)
18-24	59 (6.99)
25-34	1,194 (14.13)
35-44	1,828 (21.64)
45-54	2,323 (27.49)
55-64	1,852 (21.92)
>=65	484 (5.73)
Female (%)	7,722 (91.40)
Plan type (%)	
EPO/PPO	4,682(55.41)
HMO	890 (10.53)
Other	2,221 (26.29)
POS	656 (7.76)
Geographic region	
Northeast	1,510 (17.87)
North Central	1,325 (15.68)
South	4,295 (50.83)
West	1,069 (12.65)
Unknown	250 (2.96)
CCI, mean (SD)	1.76 (1.35)
Comorbidities (%)	
Hypertension	2,885 (34.15)
Hyperlipidemia	1,745 (20.65)
Obesity	1,076 (12.74)
Cerebrovascular Diseases	268 (3.17)
Thrombosis	241 (2.85)
Renal Disease	654 (7.74)
Chronic Obstructive Pulmonary Disease	1,032 (12.21)
Hypothyroidism	1,425 (16.87)
Osteoarthritis	958 (11.34)
Osteoporosis	349 (4.13)
Fibromyalgia	969 (11.47)
Depression	1,180 (13.97)
Polyneuropathy	308 (3.65)
Solid Tumor	247 (2.92)
Metastatic Cancer	25 (0.30)

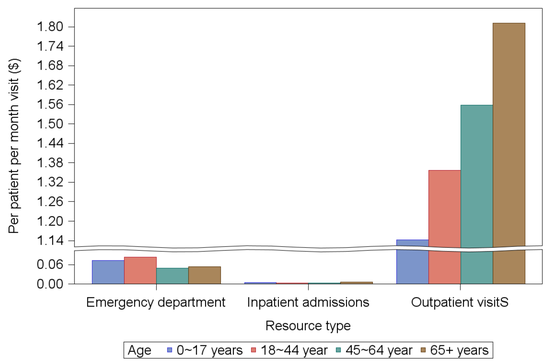

Figure 1: Per-patient per-month all-cause healthcare resource utilization in SLE patients (categorized by age group) during the follow-up period

RESULTS

- We included 8,449 SLE patients. The analytic cohort was primarily dominated by female (91%), and the median age was 46 years.
- 55% patients were insured through either an Exclusive Provider Organization (EPO) or Preferred Provider Organization (PPO).
- There was a substantial comorbidity burden among the SLE patients with respective prevalence of hypertension, hyperlipidemia, hypothyroidism, depression, obesity, and osteoarthritis of 34%, 21%, 17%, 14%, 13%, and 11%.
- Over the 20.9-month median follow-up period, the mean office visits, emergency department admissions, and inpatient admissions PPPM were 1.48, 0.06, and 0.02, respectively.
- The cost assessment cohort included 6,554 patients. During the follow-up period, the mean cost (standard deviation, SD) PPPM were $586 ($2,083), $99 ($340), $440 ($953), and $105 ($1,003) for pharmacy cost, emergency department cost, outpatient office visit cost, and inpatients admission cost respectively.
- Mean all-cause healthcare cost (SD) among patients with at least one inpatient admission PPPM was $589 ($2,088), $239 ($496), $444 ($956), and $2,238 ($4,084) for outpatient pharmacy, emergency department visits, and outpatient encounters and inpatient admission, respectively.

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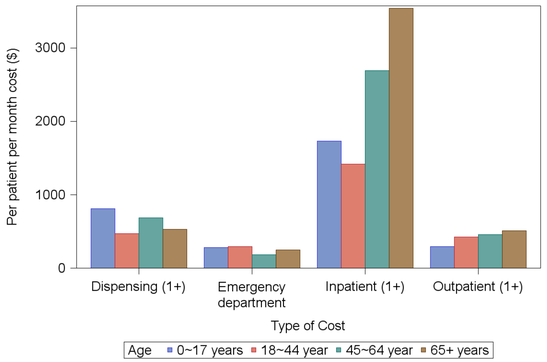

Figure 2: Mean all-cause healthcare cost during the follow-up among SLE patients (categorized by age group) with at least one relevant healthcare encounter

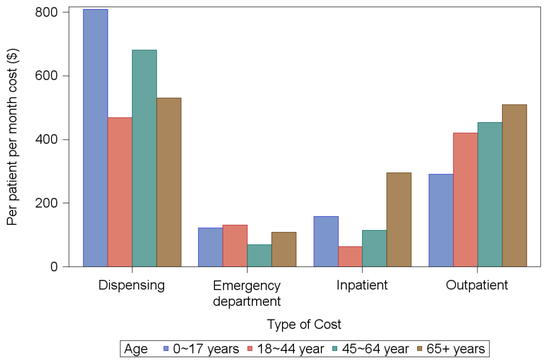

Figure 3: Mean all cause healthcare cost during the follow-up among all SLE patients (categorized by age group)

CONCLUSION

- We quantitatively summarized the HCRU and healthcare cost among commercially insured US patients on active treatment.
- Further studies are warranted to identify the factors associated with the economic outcomes of SLE care.

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