

epidemiologic characteristics and efficacy of systemic management of LP in a large US cohort.

In this institutional review board–approved retrospective chart review, 444 patients were identified as having biopsy-proven LP diagnoses at the Dermatology Departments of NYU Langone Health and NYC Health + Hospitals Bellevue during January 1, 2005–September 5, 2016. Demographic, physical examination, pathologic, laboratory, and treatment data were extracted during the review of medical records. Patients without biopsy-proven LP or with other lichenoid eruptions or insufficient data recorded in medical records were excluded.

Demographic data and clinical characteristics are shown in [Table I](#). Pruritus was the presenting symptom in 63.1%, and oral or genital involvement was documented in 38.7%. Initial misdiagnosis occurred in 15.1% of patients. Of the patients tested for hepatitis C virus (HCV) infection (n = 222), 13.5% tested positive, and of those with oral or genital disease (n = 95), 15.8% were HCV positive; the estimated prevalence of HCV infection in the United States and in New York is 2%–3%.<sup>3</sup>

Nearly one-third of patients received systemic therapy or phototherapy ([Table II](#)). Of the nonlocal therapies, narrowband UVB (NB-UVB) was the most often used. Cyclosporine and NB-UVB led to the most favorable treatment outcomes. Mycophenolate mofetil (n = 5), acitretin (n = 10), and doxycycline (n = 6) were less effective. Of the 32 patients who received systemic steroids with a known therapeutic outcome, their average treatment duration was 1.4 months, 84.4% noted treatment efficacy, and 31.3% reported flares upon discontinuation.

This study is the largest study of LP in North America to date. Consistent with recent literature, our findings support a slight female predominance, typical age of onset in the 4th and 5th decades of life, and a lack of racial or ethnic predilection. Previously published data shows a variable prevalence of mucosal disease, and our data falls at the lower end of that range.<sup>4</sup> We surmise that this low prevalence of mucosal disease might be related to the inclusion criteria of a required biopsy, as mucosal disease is often not biopsied, or the potential referral of these patients to subspecialists. Our study is limited by its retrospective nature, lack of standardized outcome measures, and missing data.

Although there is a paucity of data to guide required systemic therapy or phototherapy of LP and a lack of comparative treatment data, nearly one-third of our cohort required nonlocal therapy. Furthermore, 30.0% required multiple, and in some cases concomitant, nonlocal therapies before achieving adequate disease control. NB-UVB was

one of the most commonly used and effective therapies in this cohort. This data, in conjunction with existing literature, supports the use of NB-UVB as a first-line nonlocal therapeutic option for patients with diffuse LP.<sup>5</sup> Cyclosporine, metronidazole, hydroxychloroquine, and methotrexate were also effective therapies in this cohort. Further studies regarding the treatment of LP will help refine an evidence-based treatment approach and delineate individualized treatment options in challenging cases.

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*Funding sources: None.*

*Conflicts of interest: None disclosed.*

*Pilot data from this project was previously displayed in a poster presentation at the American Academy of Dermatology in San Diego, California on February 16–20, 2018.*

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<https://doi.org/10.1016/j.jaad.2019.04.027>

#### System-level variations in treatment delay for nonmetastatic melanoma



*To the Editor:* In noncutaneous malignancies, it has been shown that delays between diagnosis and treatment are associated with poorer long-term patient survival.<sup>1</sup> Recent work has demonstrated a similar association for malignant melanoma.<sup>2</sup> Riker

et al<sup>3</sup> suggest that primary excisions should occur within 4-6 weeks after diagnostic biopsy, although this recommendation is not yet included in published guidelines. Previous work with a Medicare cohort revealed that patients who receive their biopsy and surgery by dermatologists have a lower risk for a delay in treatment.<sup>4</sup> There has been an increasing recognition of the influence of system-level factors (eg, health system and treatment facility factors rather than individual patient characteristics) on a variety of health care outcomes, including treatment delays and patient survival. Previous work identifying variations in health care access and outcomes has helped to direct further inquiry into the underlying causes for these differences. Although patient insurance status has been implicated as a factor influencing melanoma surgery delay,<sup>5</sup> the influence of other system-level factors on delayed melanoma excisions is not yet established. We aimed to study the effect of system-level factors on treatment delay beyond 6 weeks using the National Cancer Database. Our cohort included 158,061 cases of nonmetastatic melanoma diagnosed during 2004-2014, with a total of 23,915 events. We assessed comorbidity by using the Charlson/Deyo scoring system.<sup>6</sup>

After exclusion of individuals with missing data, a number of system-level factors were associated with delays in treatment (Table I). When categorizing states by US Census region,<sup>7</sup> we found that patients treated in the northeastern (odds ratio 1.626, 95% confidence interval 1.569-1.686) and western (odds ratio 1.366, 95% confidence interval 1.311-1.423) states were particularly likely to experience delays in treatment compared with those treated in the South. Patients treated in large metropolitan regions were also more likely to experience treatment delays than those treated in smaller towns with an urban designation. In addition, distance from the treatment facility was significantly associated with an increased risk of delay. Higher volume facilities, as well as those with academic affiliations, were more likely to experience delays in excision. Last, both patient race and insurance status was predictive of delayed treatment. Uninsured patients, as well as black and Hispanic patients, were more likely to receive delayed excisions.

In this study, we identified a number of factors associated with delays in surgical excision for cases of nonmetastatic invasive melanoma. It is not clear why patients residing in larger metropolitan areas or in northeastern or western states experience greater delays in treatment. In fact, previous work has suggested that large metropolitan populations, particularly in the northeast and western United

**Table I.** Multivariate analysis of factors associated with delayed excision

Variable	OR (P value)	95% CI
Age	1.004 (<.001)	1.002-1.005
Sex		
Female	Reference	-
Male	0.984 (.222)	0.958-1.010
Race		
White	Reference	-
Black	1.600 (<.001)	1.354-1.891
Hispanic	1.428 (<.001)	1.275-1.600
Asian or Pacific Islander	1.182 (.166)	0.933-1.498
Other or unknown	0.848 (.002)	0.766-0.939
Charlson/Deyo Score		
0	Reference	-
1	1.130 (<.001)	1.084-1.178
2	1.192 (<.001)	1.082-1.312
≥3	1.365 (<.001)	1.150-1.621
Insurance		
Private	Reference	-
Government	1.170 (<.001)	1.128-1.213
None	1.388 (<.001)	1.275-1.511
Unknown	1.081 (.153)	0.971-1.205
US Census rural-urban continuum definition		
Urban population 2500-19,999	Reference	-
Urban population ≥20,000	1.019 (.602)	0.950-1.093
Metro population <250,000	1.037 (.267)	0.972-1.106
Metro population 250,000-1,000,000	1.166 (<.001)	1.100-1.237
Metro population ≥1,000,000	1.285 (<.001)	1.215-1.360
Rural population or urban population <2500	1.105 (.063)	0.995-1.228
Distance to treatment center quartile, miles		
Q1, <6	Reference	-
Q2, 6-13.9	1.071 (.001)	1.030-1.113
Q3, 14-29.9	1.230 (<.001)	1.182-1.281
Q4, ≥30	1.741 (<.001)	1.667-1.818
US Census facility region		
South	Reference	-
Northeast	1.626 (<.001)	1.569-1.686
Midwest	1.131 (<.001)	1.092-1.172
West	1.366 (<.001)	1.311-1.423
Facility type		
Nonacademic	Reference	-
Academic	1.461 (<.001)	1.416-1.506
Facility volume quartile, cases/y		
Q1, <7	Reference	-
Q2-Q3, 7-33	1.088 (.095)	0.985-1.201
Q4, >33	1.261 (<.001)	1.143-1.390

Continued

**Table I.** Cont'd

Variable	OR (P value)	95% CI
Breslow depth, mm		
≤1.0	Reference	-
1.01-2.00	1.084 (<.001)	1.048-1.122
2.01-4.00	1.179 (<.001)	1.132-1.228
>4.00	1.421 (<.001)	1.357-1.487
No. positive nodes		
0	Reference	-
1	1.108 (.015)	1.020-1.203
2-3	1.238 (.001)	1.095-1.400
≥4	1.414 (<.001)	1.202-1.664

CI, Confidence interval; Q, quartile; OR, odds ratio.

States, have better access to care than smaller towns. It is possible that the larger patient populations in these areas makes prompt treatment of a diagnosed melanoma logistically more difficult. This is supported by our finding that patients treated at larger academic centers are more likely to experience delays. Together with our finding of increased delays for patients located farther from their treating facility, our study findings highlight a potential limitation of increasingly popular large regional centers of excellence for cancer care, namely that the patient volume of such centers might compromise their ability to provide timely care. Nevertheless, previous work has demonstrated that, in spite of these delays, such centers achieve improved patient survival outcomes.<sup>8</sup> It is not clear whether our findings of the impact of patient race and insurance status on the likelihood of delay reflect health differences or true care disparities.<sup>9</sup> Further study of the underlying causes of these regional and system-level variations in treatment delay might reveal approaches to better optimize melanoma care.

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Funding sources: None.

Conflicts of interest: None disclosed.

IRB approval status: Reviewed and exempted from institutional review by the Yale Human Investigation Committee (IRB #2000023704).

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<https://doi.org/10.1016/j.jaad.2019.04.038>

## Knowledge and opinions among Canadian academic physicians regarding genetic screening to prevent severe cutaneous adverse drug reactions



*To the Editor:* Stevens-Johnson syndrome (SJS) and toxic epidermal necrolysis (TEN) are rare drug reactions with high mortality and long-term physical and psychological complications.<sup>1,2</sup> Carbamazepine and allopurinol are frequent inducers of SJS and TEN. Certain populations are genetically predisposed to SJS and TEN caused by carbamazepine and allopurinol: human leukocyte antigen B (*HLA-B*)\*15:02-positive Asians taking carbamazepine and *HLA-B*\*58:01-positive Asians and Europeans taking allopurinol. *HLA-B*\*15:02 is not associated with SJS and TEN in the Japanese, Koreans, or Europeans, and the association between *HLA-B*\*58:01 and allopurinol-induced SJS and TEN has not been studied in populations other than Asians and Europeans.<sup>3</sup> In a study conducted in Taiwan, screening for *HLA-B*\*15:02 and avoidance of carbamazepine produced no cases of SJS and TEN compared with a historical incidence of 0.23%.<sup>4</sup> Similar findings were demonstrated for allopurinol-induced SJS and TEN.<sup>5</sup> International regulatory agencies and medical associations have recommended routine genetic