Clinical epidemiology and treatment of lichen planus: A retrospective review of 2 tertiary care centers

To the Editor: Lichen planus (LP) is a chronic, pruritic, inflammatory disorder of the skin, nails, and mucosal membranes, with a reported incidence of ~1% worldwide.[1] Although LP is frequently encountered in clinical practice and portends a negative impact on health-related quality of life, the epidemiology and management of LP remains poorly characterized and is based on older studies performed outside of the United States.[2] In this study, we seek to define the clinical and

Table I. Cohort demographics and clinical characteristics

Characteristic	NYU Skin and Cancer unit	NYU faculty group practice	NYC Health + Hospitals Bellevue	Combined
No. patients	135	149	160	444
Age of disease onset, y, mean (SD), n = 331, overall	47.1 (15.5)	46.9 (20.8)	45.3 (16.3)	46.4 (17.6)
Age patient sought treatment, y, mean (SD), N = 444, overall	50.5 (15.2)	51.7 (19.5)	47.7 (15.4)	49.9 (16.9)
Interval between onset and diagnosis, y, mean (SD), n = 300, overall	0.7 (1.2)	0.9 (2.0)	0.5 (1.2)	0.7 (1.5)
Sex				
Women	89 (66)	95 (64)	88 (55)	272 (61)
Men	46 (34)	54 (36)	72 (45)	172 (39)
Ethnicity, n = 305				
White	55 (46)	50 (69)	18 (16)	123 (40)
Black	25 (21)	6 (8)	52 (46)	83 (27)
Hispanic	17 (14)	2 (3)	31 (27)	50 (16)
Asian	22 (18)	14 (19)	10 (9)	46 (15)
Other	1 (1)	0 (0)	2 (2)	3 (1)
Reported prominent feature of disease, n = 424				
Pruritus	73 (54)	76 (60)	114 (73)	263 (63)
Rash	51 (38)	25 (20)	28 (18)	104 (25)
Pain	7 (5)	23 (18)	15 (10)	45 (11)
Nail	3 (2)	2 (2)	0 (0)	5 (1)
Disease subtypes, N = 444				
classic cutaneous lichen planus	115 (85)	135 (91)	140 (88)	390 (88)
Hypertrophic	10 (7)	8 (5)	12 (8)	30 (7)
Erosive	1 (1)	2 (1)	2 (1)	5 (1)
Atrophic	2 (1)	1 (1)	1 (1)	4 (1)
lupus erythematosus/lichen planus overlap	3 (2)	1 (1)	0 (0)	4 (1)
Lichenoid mucositis	2 (1)	1 (1)	1 (1)	4 (1)
Lichen planus pigmentosus	0 (0)	1 (1)	2 (1)	3 (1)
Bullous	0 (0)	0 (0)	2 (1)	2 (0)
Nail	2 (1)	0 (0)	0 (0)	2 (0)
Degree of involvement,* N = 444				
Limited, <2 body sites	57 (42)	75 (50)	79 (57)	211 (48)
Diffuse, ≥2 body sites	61 (45)	49 (33)	60 (43)	170 (38)
Only oral, genital, or both	14 (10)	23 (15)	21 (13)	58 (13)
Nail only	3 (2)	2 (1)	0 (0)	5 (1)
Oral, genital, or both, n = 172				
Oral only	28 (61)	30 (53)	27 (39)	85 (49)
Genital only	14 (30)	9 (16)	30 (43)	53 (31)
Both oral and genital	4 (9)	18 (32)	12 (17)	34 (20)
Of patients with oral or genital disease or both, n = 172, patients with cutaneous involvement	34 (74)	30 (53)	40 (58)	104 (60)
Of patients with cutaneous involvement, n = 371, patients with oral or genital involvement or both	34 (17)	30 (24)	40 (31)	104 (28)
Hepatitis C virus prevalence among tested, n = 222	8 (12)	3 (7)	19 (17)	30 (14)

Values are n (%) except where indicated otherwise.
*Every effort was made to only include patients with significant involvement in the diffuse category; while most patients with involvement of 2 sites were considered diffuse, patients with limited involvement of 2 sites were categorized as limited disease.

Table II. Treatment type and outcome

Treatment type	Value, n (%)
Local therapy, including topical and intralesional treatment	282 (64)
Nonlocal therapy, including systemic medications and UV therapy	142 (32)
≥2 Simultaneous or subsequent nonlocal agents	42 (30)
≥3 Simultaneous or subsequent nonlocal agents	13 (9)
None	21 (5)

Nonlocal therapeutic agent, dosing range (modal dose)*	No. patients	Worsened disease, n (%)	No change in disease, n (%)†	Mild or moderate disease improvement, n (%)†	Significant improvement or resolution of disease, n (%)†	No. in order of nonlocal therapies, average
NB-UVB, unable to determine	35	2 (6)	3 (9), includes 1 patient with concomitant prednisone	19 (54), includes 1 patient with concomitant metronidazole	11 (31), includes 1 patient with concomitant methotrexate	1.5
Cyclosporine, 100-400 mg/d (300 mg/d)	18	1 (6)	1 (6)	10 (56), includes 1 patient with concomitant acitretin	6 (33)	1.4
Hydroxychloroquine, 200-600 mg/d (400 mg/d)	17	2 (12)	3 (18)	10 (59), includes 1 patient with concomitant tacrolimus and doxycycline	2 (12)	1.6
Metronidazole, 500-1000 mg/d (1000 mg/d)	17	0 (0)	4 (24)	7 (41), includes 1 patient with concomitant prednisone, and 1 with NB-UVB	6 (35)	1.5
Acitretin, 10-50 mg/d (25 mg/d)	10	0 (0)	5 (50)	2 (20), includes 1 patient with concomitant prednisone	3 (30), includes 1 patient with concomitant cyclosporine	1.7
Methotrexate, 7.5-25 mg/wk (15 mg/wk)	8	0 (0)	2 (25)	4 (50), includes 1 patient with concomitant prednisone and acitretin, and 1 with concomitant NB-UVB	2 (25)	1.5
Doxycycline, 40-200 mg/d (200 mg/d)	6	0 (0)	3 (50), includes 1 patient with concomitant tacrolimus	3 (50)	0 (0)	2
Mycophenolate mofetil, 1000-3000 mg/d (2000 mg/d)	5	0 (0)	2 (40)	3 (60), includes 1 patient with concomitant prednisone, and 1 with methotrexate	0 (0)	2.2

NB-UVB, Narrowband ultraviolet B; *UV*, ultraviolet.

*This portion of table only includes patients whose therapeutic outcomes were documented. Other treatments with n <5 include dapsone, isotretinoin, griseofulvin, etanercept, ustekinumab, nortriptyline, rituximab, tacrolimus, broadband UVB phototherapy, psoralen + UVA, sucralfate, and gabapentin.

†Another therapy was considered concomitant if it overlapped for at least 3 months.

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%.[3]

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.[4] 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.[5] 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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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.[1] Recent work has demonstrated a similar association for malignant melanoma.[2] Riker