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Prevalence estimates for lichen planopilaris and frontal fibrosing alopecia in a New York City health care system

To the Editor: Few studies have examined the epidemiology of lichen planopilaris (LPP) and frontal fibrosing alopecia (FFA), and they are limited by small sample sizes.[1-3] The true overall prevalence of LPP and FFA is unknown. To address this, we performed a retrospective cohort study at Columbia University Irving Medical Center.

We queried electronic health records from *NewYork-Presbyterian Hospital and* Columbia-Doctors for patients with *International Classification of Diseases*, 10th Revision, code L66.1 (LPP, FFA) between 2015 and 2018. A medical record review was performed to verify that the findings for all patients were consistent with LPP/FFA based on clinical or histologic criteria (Supplemental methods, Supplemental Table I, available via Mendeley at https://data.mendeley.com/datasets/ytf9wf6nfs/1).[4] All patients in the health system without LPP or FFA between 2015 and 2018 were used as controls.

Of 1,189,507 patients seen between 2015 and 2018, 381 had an *International Classification of Diseases*, 10th Revision, code L66.1, and 376 of these patients met clinical criteria for LPP (n = 203) or FFA (n = 173). Of the 223 available biopsy samples reviewed, 204 met criteria for LPP or FFA. Table I lists their demographic characteristics.

Women in the combined LPP and FFA group outnumbered men (81.4% vs 18.7%), with an odds ratio of 3.31 (95% confidence interval, 2.55-4.29). Patients in the combined group were most commonly in their 60s (24.1%). When separated into the LPP or FFA subgroups, LPP was most commonly seen in the third to fifth decades (58.4%), and FFA was most commonly seen in the fifth and sixth decades (57.4%). Patients in the combined group were most frequently White (48.2%) (odds ratio, 1.77; 95% confidence interval, 1.44-2.19). Of those, 67.6% were non-Hispanic.

We observed an overall crude prevalence of 0.032% (14.3 cases per 100,000 persons) and a sex- and age-adjusted prevalence of 0.028% for the combined group (Table II, Supplemental Table II). The overall crude prevalence was 0.017% for LPP and 0.015% for FFA. The age- and sex-adjusted prevalence was 0.016% for LPP and 0.012% for FFA. Women had a higher adjusted disease prevalence overall (0.023% women; 0.006% men), although the ratio was more strongly skewed for FFA (0.012% women; 0.001% men) compared with LPP (0.011% women; 0.004% men). The adjusted prevalence of the combined group was highest in the groups aged 40 to 70 years. The prevalence for LPP was highest in the 41 to 50 year range (0.004%), and for FFA alone, it was highest between 51 and 60 years and 61 and 70 years (0.004%). The prevalence of the combined LPP and FFA group was highest among non-Hispanic Whites (0.091%).

Limitations include the retrospective analysis and imperfect standard to confirm the diagnosis. Our prevalence estimates may be an underestimate because some patients with a diagnosis before 2015 may not have been monitored in our system. A proportion of the patients did not have documented race/ethnicity.

To our knowledge, this is the largest study to date examining LPP and FFA prevalence across race/ethnicity and sex.[5] Most of our patients were women aged older than 50 years, corroborating published

Table I. Demographic characteristics of patients with lichen planopilaris (*LPP*) and frontal fibrosing alopecia (*FFA*) and control population (no LPP/FFA) in a New York City health care system*

Variable	Total (No.)	Combined		LPP		FFA		No LPP/FFA
		No. (%)	Odds ratio (95% CI)	No. (%)	Odds ratio (95% CI)	No. (%)	Odds ratio (95% CI)	No. (%)
Sex								
Female	675,869	**306 (81.4)**	**3.31 (2.55-4.29)**	**147 (72.4)**	**1.99 (1.46-2.71)**	**159 (91.9)**	**8.60 (4.98-14.85)**	675,563 (56.9)
Male	512,090	70 (18.7)	Reference	56 (27.6)	Reference	14 (8.1)	Reference	512,020 (43.1)
Age, y								
1 to 10	124,472	0 (0.0)	…	0 (0.0)	…	0 (0.0)	…	124,472 (10.5)
11 to 20	114,711	0 (0.0)	…	0 (0.0)	…	0 (0.0)	…	114,711 (9.7)
21 to 30	153,069	**13 (3.4)**	**0.25 (0.14-0.45)**	**12 (5.8)**	**0.30 (0.16-0.57)**	**1 (0.6)**	**0.08 (0.01-0.61)**	153,069 (12.9)
31 to 40	172,628	59 (15.6)	Reference	45 (22.1)	Reference	14 (8.1)	Reference	172,628 (14.5)
41 to 50	140,854	56 (14.8)	1.16 (0.81-1.68)	36 (17.7)	0.98 (0.63-1.52)	20 (11.5)	1.75 (0.88-3.47)	140,854 (11.9)
51 to 60	147,914	**80 (21.2)**	**1.58 (1.13-2.22)**	**38 (18.6)**	0.99 (0.64-1.52)	**42 (24.1)**	**3.50 (1.91-6.41)**	147,913 (12.4)
61 to 70	144,673	**91 (24.1)**	**1.84 (1.33-2.55)**	**33 (16.2)**	0.88 (0.56-1.37)	**58 (33.3)**	**4.94 (2.76-8.86)**	144,673 (12.2)
71 to 80	113,106	**63 (16.7)**	**1.63 (1.14-2.33)**	**32 (15.7)**	1.09 (0.69-1.71)	**31 (17.8)**	**3.38 (1.80-6.35)**	113,106 (9.5)
81 to 90	58,556	16 (4.2)	0.80 (0.46-1.39)	8 (3.9)	0.52 (0.25-1.11)	8 (4.6)	1.69 (0.71-4.02)	58,556 (4.9)
≥91	19,147	0 (0.0)	…	0 (0.0)	…	0 (0.0)	…	19,147 (1.6)
Race and ethnicity†								
White								
Hispanic	97,414	**21 (11.5)**	**0.46 (0.27-0.78)**	12 (12.6)	**0.43 (0.22-0.87)**	9 (10.3)	0.50 (0.22-1.14)	97,393 (24.9)
Non-Hispanic	213,482	123 (67.6)	1.23 (0.85-1.76)	60 (63.2)	0.99 (0.61-1.60)	63 (72.4)	1.59 (0.91-2.79)	213,359 (54.5)
Unknown	80,843	38 (20.9)	Reference	23 (24.2)	Reference	15 (17.2)	Reference	80,805 (20.6)
Black or African American								
Hispanic	18,846	3 (25.0)	0.67 (0.17-2.69)	2 (50.0)	1.34 (1.19-9.54)	1 (12.5)	0.33 (0.04-3.01)	18,843 (22.6)
Non-Hispanic	39,333	3 (25.0)	0.32 (0.08-1.29)	0 (0.0)	…	3 (37.5)	0.48 (0.11-2.16)	39,330 (47.1)
Unknown	25,328	6 (50.0)	Reference	2 (50.0)	Reference	4 (50.0)	Reference	25,32 (30.3)
Asian								
Hispanic	3568	0 (0.0)	…	0 (0.0)	…	0 (0.0)	…	3568 (12.0)
Non-Hispanic	17,301	9 (75.0)	1.54 (0.42-5.67)	4 (80.0)	2.05 (0.23-18.32)	5 (71.4)	1.28 (0.25-6.60)	17,292 (58.2)
Unknown	8855	3 (25.0)	Reference	1 (20.0)	Reference	2 (28.6)	Reference	8852 (29.8)
Other								
Hispanic	20,651	1 (20.0)	0.84 (0.05-12.48)	1 (50.0)	…	0 (0.0)	…	20,650 (46.3)
Non-Hispanic	6549	3 (60.0)	7.98 (0.83-76.72)	1 (50.0)	…	2 (66.7)	5.32 (0.48-58.66)	6546 (14.7)
Unknown	17,409	1 (20.0)	Reference	0 (0.0)	Reference	1 (33.3)	Reference	17,408 (39.0)
Unknown								
Hispanic	70,938	13 (7.8)	0.67 (0.38-1.18)	9 (9.2)	0.79 (0.40-1.58)	4 (5.8)	0.50 (0.18-1.36)	70,925 (11.1)
Non-Hispanic	24,419	5 (3.0)	0.75 (0.31-1.82)	2 (2.0)	0.51 (0.13-2.08)	3 (4.4)	1.08 (0.34-3.44)	24,414 (3.8)
Unknown	544,571	149 (89.2)	Reference	87 (88.9)	Reference	62 (89.9)	Reference	544,422 (85.1)

CI, Confidence interval; *No.*, number.

*Bold odds ratios are statistically significant ($P < .05$).

†Each race was examined by ethnicity (Hispanic or non-Hispanic).

Table II. Overall and adjusted group-specific prevalence estimate for lichen planopilaris (*LPP*) and frontal fibrosing alopecia (*FFA*) in a New York City Health Care system*

	Combined			LPP			FFA		
Characteristic	LPP/FFA cases, No.	Crude prevalence, %	Standardized prevalence, %	LPP cases, No.	Crude prevalence, %	Standardized prevalence, %	FFA cases, No.	Crude prevalence, %	Standardized prevalence, %
All	376	0.032	0.029	203	0.017	0.015	173	0.015	0.013
Age-adjusted sex prevalence and age distributions									
Sex									
Female	306	0.0453	0.023	147	0.0217	0.011	159	0.0235	0.012
Male	70	0.0103	0.006	56	0.0109	0.004	14	0.0027	0.001
Age, y									
1 to 10	0	0	0.000	0	0	0.000	0	0	0.000
11 to 20	0	0	0.000	0	0	0.000	0	0	0.000
21 to 30	13	0.0085	0.001	12	0.0078	0.001	1	0.0007	0.000
31 to 40	59	0.0342	0.005	45	0.0261	0.003	14	0.0081	0.001
41 to 50	56	0.0397	0.006	36	0.0255	0.004	20	0.0142	0.002
51 to 60	80	0.0541	0.007	38	0.0257	0.003	42	0.0284	0.004
61 to 70	91	0.0629	0.006	33	0.0228	0.002	58	0.0401	0.004
71 to 80	63	0.0557	0.003	32	0.0283	0.001	31	0.0274	0.001
81 to 90	16	0.0273	0.001	8	0.0137	0.000	8	0.0137	0.000
≥91	0	0	0.000	0	0	0.000	0	0	0.000
Age-adjusted race and ethnicity prevalence									
White									
Hispanic	21	0.0216	0.034	12	0.0123	0.025	9	0.0092	0.017
Non-Hispanic	122	0.0576	0.074	60	0.0281	0.054	62	0.0295	0.037
Unknown	38	0.0470	0.048	23	0.0285	0.052	15	0.0186	0.029
Black or African American									
Hispanic	3	0.0159	0.032	2	0.0106	0.020	1	0.0158	0.012
Non-Hispanic	3	0.0076	0.012	0	0	0.000	3	0.0076	0.012
Unknown	6	0.0237	0.037	2	0.0079	0.013	4	0.0053	0.024
Asian									
Hispanic	0	0	0.000	0	0	0.000	0	0	0.000
Non-Hispanic	9	0.0520	0.080	4	0.0231	0.040	5	0.0289	0.040
Unknown	3	0.0339	0.047	1	0.0113	0.011	2	0.0226	0.036
Other									
Hispanic	1	0.0048	0.017	1	0.0048	0.017	0	0	0.000
Non-Hispanic	3	0.0458	0.055	1	0.0152	0.018	2	0.0305	0.036
Unknown	1	0.0057	0.007	0	0	0.000	1	0.0057	0.007
Unknown									
Hispanic	13	0.0183	0.035	9	0.0127	0.025	4	0.0056	0.009
Non-Hispanic	5	0.0205	0.031	2	0.0082	0.018	3	0.0123	0.012
Unknown	149	0.0273	0.046	87	0.0160	0.027	62	0.0114	0.019

No., Number.

*Race and ethnicity (Hispanic or Non-Hispanic) were classified separately to reflect self-identification of patients.

data.[2,3,5] Both conditions are relatively uncommon with similar prevalence. They are more common in White and Asian female patients aged between 40 and 70 years.

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Brodalumab success in patients with moderate-to-severe psoriasis who failed previous interleukin-17A inhibitors

To the Editor: The interleukin-17 (IL17) signaling pathway plays a pivotal role in the pathogenesis of psoriasis. While several studies investigated the efficacy and safety of switching between IL17A inhibitors, data on switching from IL17A inhibitors to the IL17 receptor A (IL17RA) antagonist brodalumab remain limited.

Clinical outcomes in patients switched from secukinumab or ixekizumab to brodalumab have been reported in 3 studies.[1-3] Gasslitter et al[1] first reported that 50% (3/7) and 67% (2/3) of patients who failed secukinumab and ixekizumab, respectively, achieved 75% improvement in Psoriasis Area and Severity Index (PASI75) after 12 weeks of treatment with brodalumab. In an open-label study that included 39 patients with moderate to severe psoriasis who had failed treatment with an IL17A inhibitor, 69% of patients achieved PASI75 after 16 weeks of brodalumab treatment.[2] Consistent with these data, Kromer et al[3] found that approximately 48% of psoriasis patients (11/23) who previously failed treatment with an IL17A inhibitor achieved PASI75 after 12 weeks of brodalumab treatment.

We conducted a Canadian multicenter retrospective study of 47 patients with chronic plaque psoriasis who were treated with brodalumab after discontinuation of secukinumab or ixekizumab because of nonresponse (44/47), response optimization (2/47), or an adverse event (1/47). Primary nonresponders were subjects who did not achieve PASI75 at weeks 12 to 16 on IL17A inhibitors. Secondary nonresponders were patients who achieved PASI75 at weeks 12 to 16 but lost PASI75 response thereafter. The primary endpoint for this study was PASI100 after 16 weeks of brodalumab treatment, whereas PASI75 and PASI90 at week 16 were secondary endpoints.

Patient demographics and clinical characteristics of study participants are summarized in Table I. Most patients were male (66%) with a mean age of 52 years. In addition, 42.5% of patients had psoriatic arthritis at baseline. Primary or secondary nonresponse were the main reasons for discontinuation