Video synchronous isotretinoin management is associated with lower risk of patient attrition compared to in-person follow-up: A single-center cohort study involving propensity-score matched analysis of patients with acne

To the Editor: Isotretinoin treats moderate-to-severe acne and involves monthly follow-up.[1] Patients who continue isotretinoin until acne clearance have lower relapse rates compared to patients who discontinue treatment early.[2] Teledermatology was associated with improved no-show rates during the COVID-19 pandemic, though its influence on patient retention during isotretinoin management remains unclear.[3] We aim to compare loss to follow-up (LTFU) risks among patients who use video synchronous teledermatology (VT) or in-person visits for isotretinoin management.

This retrospective study includes patients diagnosed with acne who initiated a new isotretinoin course under dermatologist care within the University of California, Los Angeles Health system. The study was approved by the University of California, Los Angeles IRB (#21-000840). Patients were grouped based on the timing of their first isotretinoin prescription relative to the COVID-19 California state of emergency: pre-pandemic (January, 1, 2019 to September 1, 2019), pandemic (September 1, 2019 to July 1, 2021), and post-pandemic (March 1, 2023 to April 1, 2024). The primary outcome was LTFU, defined as receiving ≤4 isotretinoin prescriptions with notes indicating a plan to continue treatment. Analyses used R (version 4.3.0; R Foundation for Statistical Computing). We fit balanced matched data using Poisson regression models adjusted for potential confounders (Supplementary Methods, available via Mendeley at https://data.mendeley.com/datasets/ymjc2mf95h/1). We examined differences in LTFU risk among demographic groups with barriers to isotretinoin care.[4]

Among the 1273 patients included, LTFU patients ($N = 223$; 17.5%) were more likely to be adults, live >10 miles from clinic, and primarily use in-person follow-up (Table I). More patients (61.6% versus 57.5%; $P < .001$) used VT after the pandemic than during the pandemic (Supplementary Table II, available via Mendeley at https://data.mendeley.com/datasets/ymjc2mf95h/1). On propensity-matched regression analysis, LTFU risk was greater for patients managed in-person during the pandemic (risk difference, [RD]: 8.6%) compared to prepandemic (Supplementary Table III, available via Mendeley at https://data.mendeley.com/datasets/ymjc2mf95h/1). LTFU risk was lower with VT follow-up compared to in-person follow-up, during and after the pandemic (RD: −17.5%; −29.3%) (Table II). LTFU risk improved more for patients who lived >10 miles from clinic during the pandemic (RD: −11.4%), and for adults during and after the pandemic (RD: −9.7%; −44.0%). VT use was not associated with treatment lapse (Supplementary Table III, available via Mendeley at https://data.mendeley.com/datasets/ymjc2mf95h/1).

VT follow-up was associated with lower LTFU risk compared to in-person follow-up for isotretinoin management during and after the pandemic. VT may reduce barriers to dermatologic care, which include scheduling conflicts with work or school and vulnerability to the health risks associated with in-person follow-up, especially for adult patients.[4,5] Study limitations are limited generalizability to regions outside of California and reliance on single-center data. Nevertheless, this study's strengths include the use of propensity-score matching and analysis of LTFU re-classification. Dermatologists who manage isotretinoin therapy should routinely assess barriers to in-person dermatologic care and continue to offer VT to patients who have difficulty attending in-person visits. Further research includes the use of multicenter datasets to improve generalizability.

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Table I. Characteristics of patients lost to follow-up during isotretinoin management

Variable	Overall, *N* = 1273	LTFU		*P*-value*
		No, *N* = 1050 (82.5%)	Yes, *N* = 223 (17.5%)	
Mean age, y (range)	23.0 (11.0-85.2)	22.5 (11.0-85.2)	25.7 (13.9-82.0)	**<.001**
Mean age, y, *n* (%)				**<.001**
<18	427 (33.5%)	386 (36.8%)	41 (18.4%)	
≥18	846 (66.5%)	664 (63.2%)	182 (81.6%)	
Sex, *n* (%)				.932
Female	579 (45.5%)	477 (45.4%)	102 (45.7%)	
Male	694 (54.5%)	573 (54.6%)	121 (54.3%)	
Race, *n* (%)				.130
White	549 (43.1%)	464 (44.2%)	85 (38.1%)	
Other or Unknown	539 (42.3%)	445 (42.4%)	94 (42.2%)	
Asian	126 (9.9%)	97 (9.2%)	29 (13.0%)	
AA	59 (4.6%)	44 (4.2%)	15 (6.7%)	
Ethnicity, *n* (%)				.584
Not Hispanic or Latino	850 (66.8%)	694 (66.1%)	156 (70.0%)	
Hispanic or Latino	187 (14.7%)	159 (15.1%)	28 (12.6%)	
Unknown	236 (18.5%)	197 (18.8%)	39 (17.5%)	
National ADI, mean (range)	6.6 (1.0-69.0)	6.5 (1.0-69.0)	7.1 (1.0-47.0)	.160
Missing, *n*	282	238	44	
Distance (mi), *n* (%)				.064
<10	850 (66.8%)	715 (68.1%)	135 (60.5%)	
≥10	423 (33.2%)	335 (31.9%)	88 (39.5%)	
% VT use, *n* (%)				**<.001**
≤50%	699 (54.9%)	531 (50.6%)	168 (75.3%)	
>50%	574 (45.1%)	519 (49.4%)	55 (24.7%)	
COVID-19 pandemic				.584
Pre	291 (22.9%)	242 (23.0%)	49 (22.0%)	
During	750 (58.9%)	623 (59.3%)	127 (57.0%)	
Post	232 (18.2%)	185 (17.6%)	47 (21.1%)	
Treatment course				
Treatment duration, mo, mean (SD)	6.5 (5.0)	7.4 (4.8)	2.3 (2.8)	**<.001**
No-show visits, %, mean (SD)	6.3 (10.7)	6.7 (11.0)	4.4 (9.0)	.070
Treatment lapse†				**.006**
No	1226 (96.3%)	1019 (97.0%)	207 (92.8%)	
Yes	47 (3.7%)	31 (3.0%)	16 (7.2%)	
Starting dose, mg/kg, mean (SD)	0.50 (0.18)	0.50 (0.17)	0.52 (0.21)	.726

AA, African American; *ADI*, area of deprivation index; *LTFU*, loss to follow-up; *SD*, standard deviation; *VT*, video synchronous teledermatology.
*Benjamini-Hochberg adjusted *P*-values for a false discovery rate of .05 with 13 comparisons. Bolded values indicate significance of $P < .05$.
†Treatment lapse is defined as receiving less than one isotretinoin prescription per every 2 months of isotretinoin.

Table II. Differences in LTFU risk associated with VT isotretinoin management during or after the COVID-19 pandemic

Subgroup	Pandemic	Postpandemic
	Risk difference (95% CI), %	Risk difference (95% CI), %
Overall	**−17.5 (−23.9, −11.1)**	**−29.3 (−35.7, −23.0)**
Age, y		
≥18 vs <18	**−9.7 (−16.0, −3.3)**	**−44.0 (−56.4, −31.6)**
Sex		
Male vs female	−5.1 (−12.4, 2.2)	−1.5 (−12.4, 9.4)
Distance, mi		
≥10 vs <10	**−11.4 (−18.4, −4.3)**	−6.6 (−16.6, 3.5)

Benjamini-Hochberg adjusted *P*-values for a false discovery rate of .05 with 18 comparisons. Bolded values indicate significance of $P < .05$.
CI, Confidence interval; *LTFU*, loss to follow-up; *VT*, video synchronous teledermatology.

Key words: acne; COVID-19; health disparities; isotretinoin; racial disparities; teledermatology.

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Conflicts of interest

None disclosed.

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