

## LETTERS TO THE EDITOR

# Retrospective study of acne telemedicine and in-person visits at an academic center during the COVID-19 pandemic

To the Editor,

The coronavirus disease 2019 (COVID-19) pandemic has resulted in significant changes in dermatologic patient care. Studies on acne visits during this time are limited.<sup>1,2</sup> Our objectives were to analyze characteristics of acne visits during the pandemic.

After Institutional Review Board approval, patients with an acne diagnosis (International Classification of Diseases (ICD-10) codes L70.9, 70.0, 70.3), from March 16, 2020 to May 20, 2020, were queried from electronic health records. Characteristics of first dermatology visits, from March 16, 2020 to May 20, 2020, and follow-ups,

from March 16, 2020 to December 31, 2020, were analyzed using standard difference of proportions and difference of means *t*-tests for continuous variables and categorical variables, respectively (significance  $p < 0.05$ ).

Five hundred and five acne patients were seen, from March 16, 2020 to May 20, 2020, with mean age 27.7 years, 69.5% females, and 95.0% of visits conducted by telemedicine. Video visits comprised 52.4% of follow-ups, June 1, 2020 to December 31, 2020. On average, patients with in-person vs video visits lived significantly closer (4.5 vs. 9.3 miles, respectively) ( $p < 0.05$ ) (Table 1).

TABLE 1 Patient demographics and clinical characteristics of acne visits 3/16/20-5/20/20

	Total	In-person visit (Percentage)	Video visit (Percentage)
Number of patients	505	25 (5.0%)	480 (95.0%)
Mean age	27.7 (SD 12.2; range 1–72)	32.5 (SD 18.3; range 13–72)	27.5 (SD 11.7; range 1–70)
Gender			
Male	154 (30.5%)	10 (40.0%)	144 (30.0%)
Female	351 (69.5%)	15 (60.0%)	336 (70.0%)
Race			
White	234 (46.3%)	15 (60.0%)	219 (45.6%)
Black or African American	37 (7.3%)	2 (8.0%)	35 (7.3%)
Asian	39 (7.7%)	1 (4.0%)	38 (7.9%)
Other	51 (10.1%)	1 (4.0%)	50 (10.4%)
Declined	144 (28.5%)	6 (24.0%)	138 (28.8%)
Ethnicity			
Hispanic or Latino or Spanish	47 (9.3%)	0 (0.0%)	47 (9.8%)
Not Hispanic or Latino or Spanish	278 (55.0%)	19 (76.0%)	259 (54.0%)
Other	17 (3.4%)	1 (4.0%)	16 (3.3%)
Declined	163 (32.3%)	5 (20.0%)	157 (32.7%)
Mean distance from clinic (miles)*	9.1 (SD 20.2)	4.5 (SD 4.4)	9.3 (SD 20.6)
Follow-up Appointment Type			
3/16/2020–5/30/2020	132	12 (9.1%)	120 (90.9%)
6/1/2020–12/31/20	519	247 (47.6%)	272 (52.4%)
Mean time until follow-up (days)*	83.4 (SD 64.0)	62.4 (SD 41.0)	84.9 (SD 65.1)

Note: Mean distance from clinic was calculated as the distance in miles between the zip code of the patient's home address and the zip code of the clinic, 10021. Outliers were excluded from analysis. Mean number of days until follow-up included only patients who had a follow-up appointment. A total of 213 patients did not have follow-up appointments yet. \*Indicates significant differences between in-person vs video visits ( $p < 0.05$ ).

**Abbreviations:** CLIA, clinical laboratory improvement amendments; COVID-19, Coronavirus disease 2019; FDA, food and drug administration; ICD-10, international classification of diseases;  $\beta$ -hCG, human chorionic gonadotropin.

**TABLE 2** Patient demographics and clinical characteristics of acne patients on isotretinoin or spironolactone 3/16/20-5/20/20

Isotretinoin patients		Spironolactone patients	
Number of patients	114	Number of patients	101
Mean age	23.8 (SD 7.5)	Mean age	30.4 (SD 7.2)
Gender		Patients with baseline K check	22 (21.8%)
Male	60 (52.6%)	≤45 years old	22/97 (22.7%)
Female	54 (47.4%)	>45 years old	0/4 (0.0%)
Mean time between follow-up appointments (days)	36.4 (SD 8.9)	Mean age	28.3 (SD 7.1)
Type of pregnancy test ordered		Patients that never had K checked	41 (40.6%)
Urine	39 (72.2%)	Average time between K checks (days)	238 (SD 184.5)
Blood	5 (9.3%)		
Both	10 (18.5%)		
Mean time between lab checks (days)	55.4 (SD 25.2)		

Note: Baseline potassium (K) serum checks also include patients who started spironolactone at an earlier visit ( $n = 65$ ).

Topical medications were most frequently prescribed compared to systemics (72.5% vs 27.5% total, respectively), with significantly higher percentage new vs established patients initiated on topicals (81.1% vs 69.5%, respectively) ( $p < 0.05$ ) (Supplemental Table).

One hundred and fourteen patients were treated with isotretinoin, with mean age 23.8 years and 47.4% females. Urine pregnancy tests were ordered for 90.7% of females. One hundred and one patients were treated with spironolactone, with mean age 30.4 years. Baseline potassium levels were ordered for 21.8% of patients (22.7% ≤ 45, 0% > 45 years) (Table 2). Follow-up visits were virtual for 70.6% and 60.2% of patients on isotretinoin and spironolactone, respectively.

When New York State in-person restrictions were lifted, telemedicine accounted for approximately half of acne follow-ups and the majority of isotretinoin and spironolactone follow-ups, suggesting that telemedicine will likely play a significant role in acne management beyond the pandemic. Since patients with in-person vs video visits lived significantly closer, telemedicine may be the preferred option for acne patients living at a distance, decreasing barriers to healthcare access. Acne virtual visits may also be favored to theoretically limit transmission of COVID-19, since demasking is required for in-person visits.

Prior to the pandemic, iPLEDGE, a computer-based risk management program approved by the Food and Drug Administration (FDA) to decrease fetal exposure to isotretinoin, required use of Clinical Laboratory Improvement Amendments (CLIA)-certified laboratories for human chorionic gonadotropin ( $\beta$ -hCG) measurements for women taking isotretinoin,<sup>3</sup> so the majority of visits were in-person. iPLEDGE recently allowed for telemedicine with home urine pregnancy tests,<sup>3</sup> with a noticeable shift from in-person to virtual visits and from use of laboratory testing to home urine pregnancy

tests. Dermatologists should be cautioned that home urine pregnancy tests have variable sensitivity and require accurate user interpretation.<sup>3</sup> Discrepancies may exist between manufacturer-advertised accuracy and laboratory-determined accuracy of home pregnancy tests, with one study reporting the agreement in accuracy ranging from less than 50% to greater than 90%, depending on the brand.<sup>4</sup>

Hyperkalemia is extremely uncommon in women ≤ 45 years old taking spironolactone,<sup>5</sup> and serum potassium monitoring may not be necessary.<sup>6</sup> Since 22.7% of patients ≤ 45 years old had potassium levels checked in this study, there is a need for education on this topic.

Limitations of this study include single-center institution and retrospective design. Outcomes and treatment efficacies were not analyzed.

Our study demonstrated that about half of acne visits and a majority of systemic acne management were conducted virtually even when in-person visits were permitted. Since video visits are likely to persist post-pandemic, dermatologists should become proficient in managing acne patients via telemedicine. Dermatologists should be cautioned when using telemedicine to manage female patients taking isotretinoin due to the lack of studies assessing the efficacy and safety of using telemedicine to manage this population. Future studies should compare treatment efficacies for in-person vs telemedicine visits.

## IRB APPROVAL

Reviewed and approved by Weill Cornell Institutional Review Board; Protocol #20-03021691-01.

**KEYWORDS**

acne, COVID-19, teledermatology, telehealth, telemedicine

**CONFLICT OF INTEREST**

The authors report no conflict of interest related to the content of the manuscript.

**DATA AVAILABILITY STATEMENT**

The data that support the findings of this study are available from the corresponding author upon reasonable request.

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**SUPPORTING INFORMATION**

Additional supporting information may be found in the online version of the article at the publisher's website. **How to cite this article:** Gu L, Diaz SM, Lipner S. Retrospective study of acne telemedicine and in-person visits at an academic center during the COVID-19 pandemic. *J Cosmet Dermatol*. 2022;21:36-38. <https://doi.org/10.1111/jocd.14606>