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## Introduction

The Covid-19 pandemic had a significant impact on the healthcare system, and dermatologists and patients alike were forced to adapt by shifting to telehealth modalities for the treatment of acne with isotretinoin (1). Despite its convenience benefits, this transition has raised some concerns, particularly the use of video or patient-captured images for skin evaluation (2). Prior studies have demonstrated the efficacy of telehealth acne visits, with many patients achieving substantial reductions in severity scores (3–5). Our study addressed the gaps in the literature by evaluating differences in isotretinoin prescribing practices based on temporal relationships to the Covid-19 pandemic.

## Methods

This retrospective chart review study was conducted at Mount Sinai Hospital, an academic institution with 44 board-certified dermatologists. Approval was obtained by the Institutional Review Board (#22-01433). The electronic medical record was queried by the Mount Sinai Data Warehouse to identify all patients with an oral isotretinoin prescription from 12 March 2019 to 12 March 2021.

Patients were included if they were between the ages of 18 and 30 years old at isotretinoin initiation and prescribed at least three months of isotretinoin. Demographic information and treatment-related variables, including cumulative dosages, laboratory monitoring visits, number of telehealth visits, and any additional treatments required after isotretinoin were collected. Recidivism, excluding topical medications, was measured by the percentage of patients who required additional oral treatment within 12 months after their respective isotretinoin completion.

## Results

Table 1 depicts the study population characteristics of the total 270 patients who fit the inclusion criteria, stratified by treatment start date. ANOVA, Kruskal-Wallis, and chi-squared tests statistical tests were conducted to examine the associations between the variables of interest. We observed significant differences in mean treatment duration ( $p=0.0074$ ) and the median number of telehealth visits ( $p<0.001$ ) among the three cohorts. However, no significant differences were observed in the mean cumulative

Table 1. Study population characteristics describing isotretinoin prescribing practices.

Variable	Total cohort (n = 264)	Started and completed isotretinoin course before 12 March 2020 <sup>a</sup> (n = 99)	Started isotretinoin course before and completed after 12 March 2020 (n = 82)	Started and completed isotretinoin course after 12 March 2020 (n = 83)	p-value
Sex					
Males	104 (39%)	47 (47%)	32 (39%)	25 (30%)	0.026
Females	160 (61%)	52 (53%)	50 (61%)	58 (70%)	0.72
Mean age and range (years)	23.6 (17–30)	22.9 (17–30)	24.0 (17–30)	24.2 (17–30)	0.038
Mean treatment duration (months)	6.07	5.76	6.73	5.77	0.0074
Mean cumulative dosage (mg/kg)	144.53	139.09	147.28	147.69	0.79
Median number of laboratory monitoring visits <sup>b</sup>	3.5	3	4	3	0.87
Median number of telehealth visits	1	0	2	2.5	<0.001
Outcome <sup>c</sup>					
n, required additional oral treatment after isotretinoin (%)	25 (9.5%)	8 (8.1%)	8 (9.8%)	9 (10.8%)	0.96
n, did not require additional oral treatment after isotretinoin (%)	138 (52.3%)	46 (46.5%)	50 (61.0%)	42 (50.6%)	0.71
n, unknown or lost to follow-up (%)	101 (38.3%)	45 (45.5%)	24 (29.3%)	32 (38.6%)	0.036
Type of oral treatment after isotretinoin <sup>d</sup>					
Spironolactone	13 (46%)	3 (38%)	3 (33%)	7 (64%)	0.29
Antibiotics	5 (18%)	2 (25%)	2 (22%)	1 (9%)	0.82
An additional isotretinoin course	10 (36%)	3 (38%)	4 (44%)	3 (27%)	0.90

<sup>a</sup>12 March 2020 was selected as a proxy for the Covid-19 pandemic start date, coinciding with the declaration of a state of emergency by the New York City government. The year prior and the year following the pandemic start date were compared.

<sup>b</sup>Pregnancy tests were excluded from the laboratory monitoring visits as all patients of child-bearing potential received pregnancy tests every month during treatment.

<sup>c</sup>Patients were followed for recidivism for 12 months after isotretinoin completion.

<sup>d</sup>Patients could have been prescribed more than one type of oral treatment after isotretinoin.

dosage per kg and recidivism across the three groups. No pregnancies occurred during this study.

## Discussion

This study highlights the adaptability of the field of dermatology in its effort to treat acne patients during the Covid-19 pandemic. Although patients who started isotretinoin after 12 March 2020 had more telehealth visits, there were no significant differences in recidivism. There was no significant difference in the mean cumulative isotretinoin dosage across the three cohorts, suggesting that the pandemic did not truncate treatment completion. There was a statistically significant difference in the treatment duration of isotretinoin, which is likely attributable to a disruption in care after 12 March 2020 with the abrupt transition to telehealth modalities.

Our findings provide valuable insights into the efficacy of telehealth for isotretinoin management and may assuage concerns surrounding the use of telehealth in this context. Telehealth represents a feasible solution to increase access to effective acne care for underserved populations. As the healthcare landscape evolves, continued flexibility in acne treatment is crucial. This is a single-institution study limited to a narrow time period and an urban population. Larger prospective studies are needed to further evaluate the influence of the Covid-19 pandemic and telehealth on isotretinoin prescribing practices.

## Disclosure statement

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