

# Evaluation of dermatology consultations in the era of COVID-19

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## Abstract

It has been reported that dermatology practices may be a vector for SARS-CoV-2 transmission and elective cases should be postponed during the pandemic period. In this context, studies on the change of patient profile in Dermatology outpatient clinic have been conducted. However, there was no study in the literature about dermatology consultations during the pandemic period. One hundred and forty-seven dermatology consultation cases in the era of COVID-19 pandemic between March 11, 2020 and May 4, 2020 were retrospectively evaluated. Twenty-four patients (16.3%) had suspicion and signs of COVID during consultation (fever, cough, shortness of breath, etc.). Nine (37.5%) of these patients also had accompanying COVID-19 skin lesions (two urticarial lesions, two livedo and necrosis, two maculopapular eruption, two vesicular rashes, one pseudo-chilblain). The number of cases that were suspected to have COVID-19 was statistically significantly higher in consultations requested by the emergency department and intensive care unit, while there were no suspected cases in outpatient clinic consultations ( $P = .001$ ). Two (1.4%) of these patients were diagnosed with COVID-19 confirmed by PCR within 2 weeks. We acknowledge that daily practice changes frequently during this period, but still our study provides a perspective to other dermatology clinics in terms of the requested dermatology consultations during the pandemic.

## KEYWORDS

COVID-19, dermatology consultation, pandemic, teledermatology

## 1 | INTRODUCTION

In December 2019, unexplained cases of viral pneumonia began to be reported in China, after which it was identified as a new coronavirus pathogen (SARS-CoV-2) and the disease was called Coronavirus Disease 2019 (COVID-19).<sup>1</sup> On March 11, 2020, World Health Organization (WHO) reported COVID-19 as a pandemic. As of May 4, 2020, the WHO reported nearly 3 559 225 cases and 249 520 deaths attributed to COVID-19 Worldwide.<sup>2</sup>

In the literature, disease-related skin lesions have been reported in approximately 20% of COVID-19 patients.<sup>3</sup> It has been reported

that dermatology practices may be a vector for SARS-CoV-2 transmission and elective cases should be postponed during the pandemic period.<sup>4</sup> In this context, studies on the change of patient profile in Dermatology outpatient clinic have been conducted.<sup>5,6</sup> During the pandemic period, the use of teledermatology was recommended in dermatology consultations.<sup>7</sup> However, there was no study in the literature about dermatology consultations during the pandemic period. In our study, we wanted to evaluate the features such as how dermatology consultations were affected during the COVID-19 pandemic, which is well established in our daily practice, features of the patients consulted, and skin findings in patients with suspected disease.

## 2 | MATERIALS AND METHODS

This study was conducted at the Necmettin Erbakan University Hospital, a major tertiary hospital and sees over 1 200 000 patients per year. Dermatology consultation cases in the era of COVID-19 pandemic between March 11, 2020 and May 4, 2020 were retrospectively evaluated. All consultations were done in a standard face-to-face examination. The age, gender, the clinic asking for the consultation, reasons for consultation, examination findings, the symptoms, recommended therapies, COVID-19 suspicion, and urgency of cases were recorded by searching the hospital automation system and patient files. Then, these patients were followed up from their medical records and checked for SARS-CoV-2 positivity at this incubation period. Our study was approved by the ethics committee of the Commission for Scientific Research of the Ministry of Health of the Republic of Turkey, required for COVID 19 studies in Turkey. Local ethics committee approval was also obtained for the study.

## 3 | STATISTICAL ANALYSIS

Data analysis was performed using the SPSS 22.0 program. Mean  $\pm$  SD and percentage were used for descriptive statistics. Chi-square test was performed and the *P* value of less than .05 was accepted as statistically significant.

## 4 | RESULTS

Over the period from March 11, 2020 to May 4, 2020, 147 dermatology consultations were evaluated. The mean age of patients was  $46.2 \pm 26.1$  (1 month-90 years old). Female patients had a slight predominance (52.4% vs 47.6%).

Then, 29 patients (19.7%) were referred from pediatrics units and 118 patients (80.3%) from departments concerning adult diseases. Consultations were requested for 72 patients (49%) from inpatient clinics, 43 patients (29.3%) from outpatient clinics, 17 patients (11.5%) from intensive care unit, and 15 patients (10.2%) from emergency department. Distribution of the clinics that requested a consultation is provided in Table 1.

Considering the diagnosis groups in consultations, skin infections were found in 41 patients (27.9%). The diagnoses made during consultations are provided in Table 2. As a result of these consultations, 82 patients (55.8%) were offered systemic treatment and 63 patients (42.9%) were recommended local treatment. A total of 35 patients (23.8%) underwent invasive procedures including 16 patients who underwent skin biopsy, 10 patients who underwent native examination, 8 patients who underwent a pathology test, and 1 patient who underwent cryotherapy.

Twenty-four patients (16.3%) had suspicion and signs of COVID during consultation (fever, cough, shortness of breath, etc.). Nine (37.5%) of these patients also had accompanying COVID-19 skin lesions (two urticarial lesions, two livedo, two maculopapular eruption,

**TABLE 1** Distribution of the clinics that requested a consultation

Unit requested consultation	Number of patients n (%)
Oncology	16 (10.9%)
Emergency department	15 (10.2%)
Hematology	12 (8.2%)
Rheumatology	11 (7.5%)
Urology	9 (6.1%)
Neurology	8 (5.4%)
Pediatric hematology	6 (4.1%)
Chest diseases	6 (4.1%)
Cardiology	6 (4.1%)
Endocrinology	5 (3.4%)
Physical therapy and rehabilitation	5 (3.4%)
Other clinics	48 (32.6%)

**TABLE 2** Distribution of consultation diagnoses

Diagnosis	Patient n (%)
Skin infections	41 (27.9%)
Dermatitis	39 (26.5%)
Drug reactions	27 (18.4%)
Behcet's disease	8 (5.4%)
Urticaria	6 (4.1%)
Psoriasis	6 (4.1%)
Autoimmune bullous dermatoses	5 (3.4%)
Cutaneous vasculitis	5 (3.4%)
Decubitus ulcers	5 (3.4%)
Pyoderma gangrenosum	3 (2%)
Skin cancer	2 (1.4%)

two vesicular rashes, one pseudo-chilblain). The number of cases that were suspected to have COVID-19 was statistically significantly higher in consultations requested by the emergency department and intensive care unit, while there were no suspected cases in outpatient clinic consultations (*P* = .001). Table 3 shows the distribution of cases suspected of having COVID-19 according to the consultation locations. Two (1.4%) of these patients were diagnosed with COVID-19 confirmed by PCR within 2 weeks.

Teledermatology was suitable for 107 patients (72.8%), and 40 patients (27.2%) needed a standard face-to-face examination due to the requirement of invasive and face-to-face procedures. Only 11 patients (7.5%) required urgent intervention.

## 5 | DISCUSSION

The aim of dermatology consultation is to identify skin diseases, identify skin lesions secondary to treatment and diseases and to warn the concerned clinician about the skin lesions that can be a part of the

**TABLE 3** Distribution of the cases suspected of having COVID-19 according to consultation locations

Consultation requested from	COVID-19 suspicion	No COVID-19 suspicion	P value
Outpatient clinic	0	43	.001
Service, inpatient clinic	13	59	
Intensive care	7*	10	
Emergency department	4*	11	

diagnosis of a systemic disease.<sup>8</sup> According to the studies involving dermatology consultations before the pandemic in the literature, Jack et al<sup>9</sup> reported that the mean patient age was  $43 \pm 14$  and Mirkamali et al<sup>10</sup> reported the same to be  $40 \pm 21$ . In our study, the mean age of the patients was  $46 \pm 26$ , which was higher compared to the studies performed before the pandemic. This was thought to be due to the fact that elective patients were discharged during the pandemic period and patients who required urgent care, elderly patients, and those who had comorbidities remained in the hospital. Similar to pre-pandemic dermatology consultations, the ratio of males and females were found to be nearly the same in our study.<sup>8-11</sup>

Considering the dermatology consultations that took place before the pandemic, it was reported that pediatric patients constituted nearly 11% to 33% of all dermatology consultations.<sup>8,12</sup> Then, 19.7% of our cases were dermatology consultations requested from pediatric departments.

Once again, considering the dermatology consultations requested in the pre-pandemic period, nearly 60% to 70% were outpatient clinic consultations.<sup>8,11,12</sup> Only 29.3% of our cases were outpatient clinic consultations, wherein consultations were mostly requested by the inpatient clinics (49%) and intensive care unit (11.5%). This was also thought to be due to the lower number of elective patients and operational outpatient clinics during the pandemic period.

It was reported that skin infections constituted approximately one-third of the diagnoses made during dermatology consultations before the pandemic.<sup>8-11</sup> According to our findings, the most common consultation result was skin infection (27.9%), which was consistent with pre-pandemic literature, but there was a noticeable reduction in the said rate. Drug reactions accounted for nearly 10% of the cases according to the pre-pandemic literature.<sup>8-12</sup> The same rate was found to be 18.4% in our study, showing that the rate of drug reactions increased during the pandemic.

With respect to the dermatology consultations in the pre-pandemic literature, it was found that a skin biopsy was performed on 4% to 13% of the patients.<sup>8-13</sup> Also 10.9% of our patients underwent a biopsy, which was consistent with the pre-pandemic literature. An invasive procedure (biopsy, native, pathergy, and cryotherapy) was performed in 23.8% of our cases. While examination of the skin and mucosa already constitutes a risk for COVID-19 infection, the risk is significantly higher in case of invasive procedures. Of all consultations, 24 (16.3%) patients were suspected of having COVID-19. The number of such cases was significantly higher in emergency department and intensive care unit consultations. These data show that dermatologists should be more careful in the pandemic period, especially in emergency department and intensive care consultations.

In a study conducted in Italy, cutaneous symptoms were detected in 18 (20.4%) patients among 88 patients with COVID-19.<sup>14</sup> Cutaneous symptoms can be classified under five main categories (urticarial lesions, livedo and necrosis, maculopapular eruption, vesicular rash, pseudo-chilblain).<sup>3</sup> In our study, cutaneous symptoms were present in 9 (37.5%) of the 19 patients who were suspected of having COVID-19. However, it would not be accurate to make a comparison with the literature, since only two of our patients had COVID-19 confirmed by PCR.

Teledermatology is the evaluation of patient images and clinical information via electronic transfer without face-to-face interviews. It is recommended to use teledermatology in dermatology practices during the COVID-19 pandemic.<sup>7</sup> Use of face-to-face interviews for each patient instead of teledermatology increases the risk of infection for both patients and physicians. Unfortunately, teledermatology is not yet fully implemented in our country, and its legal infrastructure is not fully formed. Teledermatology was suitable in 72.8% of our cases, and this high rate suggested that teledermatology could significantly reduce the risk of disease transmission when used in dermatology consultations. Further studies to be conducted after the end of the COVID-19 outbreak will help us better understand the outcomes of teledermatology and standard face-to-face examination in terms of the risk of infection in dermatology consultations.

## 6 | CONCLUSION

During the COVID-19 pandemic, dermatology consultations continue to guide many clinics in terms of diagnosis, treatment, and complication follow-up. Our study is important in that it is the first study in the literature that investigated dermatology consultations during the COVID-19 pandemic. We acknowledge that daily practice changes frequently during this period, but still our study provides a perspective to other dermatology clinics in terms of the requested dermatology consultations during the pandemic.

## CONFLICT OF INTEREST

None.

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