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# The Analysis of the Patients Who Have Received Phototherapy During the COVID-19 Pandemic

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## ABSTRACT

**Background:** The coronavirus pandemic has led to major changes in our daily practices. Due to the increased risk of transmission in the waiting areas, all of the non-emergency patients have been requested to stay home during the peak periods of the pandemic which lead to the cancellation of phototherapy sessions during the peak period. The aim of this study is to evaluate the demographics of, diagnoses of and the phototherapy modalities used in the patients who have received phototherapy during the first year of the coronavirus pandemic; and to evaluate if they have contracted coronavirus during their treatment.

**Materials and Methods:** This is a retrospective study performed in the phototherapy unit of Istanbul University-Cerrahpasa, Cerrahpasa Faculty of Medicine, Clinic of Dermatology.

**Results:** A total of 137 patients were included in this study. Most common diagnoses to receive phototherapy were psoriasis vulgaris, mycosis fungoides and morphea. The most treatment modality to be used during the pandemic was narrowband ultraviolet-B. Only nine of the patients were diagnosed with coronavirus during phototherapy sessions, all had a benign disease course.

**Conclusion:** The risk of disease transmission due to phototherapy sessions is quite low. On the contrary, relapse risk is high if the treatment is stopped. We suggest that phototherapy modalities should be continued in necessary patients during this period given that the protective precautions can be applied in the phototherapy units.

**Keywords:** COVID-19, Demographics, Pandemic, Phototherapy

## Introduction

The new coronavirus pandemic has started in central China in 2019 and soon spread to the entire world. Similar to other specialties, dermatology outpatient services have also been shifted to emergency-only and dermatologists worked in the coronavirus inpatient services. Due to the increased risk of transmission in the waiting areas, all of the non-emergency patients have been requested to stay home during the peak periods of the pandemic.

Phototherapy sessions have first been cancelled during the peak period. Thereafter with the decline in the case numbers, the patients in whom the benefit of phototherapy outweighed the risk of coronavirus were rescheduled with long intervals and appropriate personal protective equipment use [1,2,3]. The aim of this study is to evaluate the demographics of, diagnoses of and the phototherapy modalities used in the patients who have received phototherapy during the first year of the coronavirus pandemic; and to evaluate if they have contracted coronavirus during their treatment.



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## Materials and Methods

This is a retrospective study in which patients who have received any modality of phototherapy in Istanbul University-Cerrahpasa, Cerrahpasa Faculty of Medicine, Department of Dermatology and Venerology, between 11 March 2020 and 31 March 2021 were included. The gender, age (years), dermatological diagnosis, phototherapy modality used [narrow band (ultraviolet-B), (ultraviolet-A)-1, psoralen plus UVA (PUVA) or local PUVA] were noted from the patient files. During treatment, each patient was questioned for the presence of signs and symptoms of coronavirus; and if present they have been tested with nasal swab polymerase chain reaction.

The approval of Istanbul University-Cerrahpasa, Cerrahpasa Faculty of Medicine Ethics Committee was taken before initiating the study (approval number: 103633, date: 02.06.2021).

## Results

A total of 137 patients were included in this study. Of these 137 patients 54 (39.4%) were male and 83 (60.6%) were female. The mean age of all patients was 42.7 years; the mean age of female patients was 44.6 years and of male patients was 42.7 years. The diagnoses of the patients were as follows: psoriasis vulgaris (43), mycosis fungoides (22), morphea (15), pruritus/prurigo nodularis (11), palmoplantar eczema (10), palmoplantar pustulosis (4), vitiligo (4), granuloma annulare (4), atopic dermatitis (3), perforating collagenosis (3), lichen planus (3), scleroderma (3), photodermatitis (2), macular amiloidosis (2), pityriasis lichenoides et varioliformis acuta (2), palmoplantar psoriasis (2), lichen amiloidosis (1), lichen sclerosis (1), lichen simplex chronicus (1) and urticaria pigmentosa (1). Figure 1 demonstrates the distribution of the patients who have received phototherapy during this period. Of these 137 patients, 94 (68.6%) received narrowband UVB, 20 (14.6%) received UVA-1, 15 (11%) received local PUVA and 8 (5.8%) received systemic PUVA. Figure 2 demonstrates the distribution of the treatment modalities used.

Nine (6.6%) of the patients have been diagnosed with the coronavirus infection during phototherapy treatment. The mean age of these patients was 44.8; 5 were female and 7 were male. Of these patients, 7 were receiving narrowband UVB, 1 was receiving PUVA and 1 was receiving local PUVA; mycosis fungoides (3), psoriasis vulgaris (2), morphea (1), macular amiloidosis (1), and perforating collagenosis (1). None of these patients were hospitalized in the inpatient services or the intensive care units. They have been tested negative afterwards and had no sequela.

## Discussion

The rising case numbers in the coronavirus pandemic has led to the closure of the outpatient services in our clinic similar to the world

in order to overcome the transmission risks along with the national lock-down that was implemented by the government [1,2,3]. During the lock-down period, home-phototherapy modalities have been implemented in centers [4], however, none of our patients could use this modality due to financial reasons. After a decline in the case numbers, and the removal of the lock-down measures by the government, we started to provide phototherapy treatment with the necessary protective measures to our patients when the benefit outweighed the risk. This study includes the data of our clinic during the lockdown, immediately after the lockdown and the period in which the health services were shifted back to the pre-pandemic era, which is referred to as the “normalisation period”.

The majority of our patient population was composed of psoriasis, mycosis fungoides and morphea patients. Since 49% of the patients

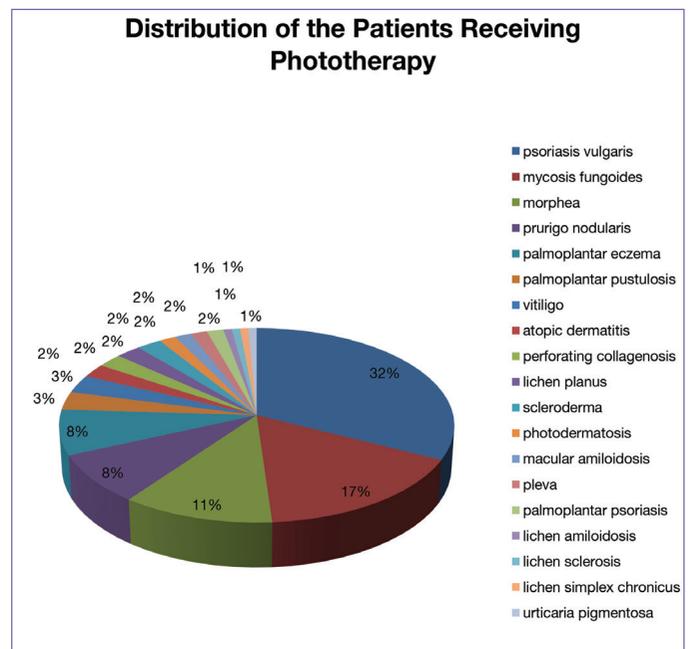


Figure 1. Distribution of the patients who received phototherapy

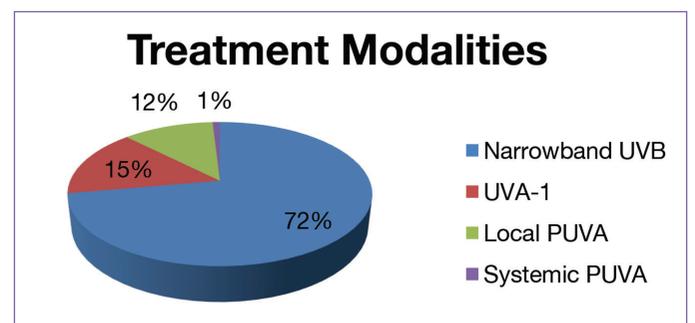


Figure 2. Treatment modalities used

UVB: Ultraviolet-B, UVA-1: Ultraviolet A-1, PUVA: Psoralen plus UVA

had either psoriasis or mycosis fungoides, the most common treatment modality used was narrowband UVB in our patient population. Nine of our patients have contracted coronavirus during this period; however, the source of contraction (if it is hospital acquired or community acquired) is unknown. None of the patients had a severe disease course or required hospitalisation.

Dragan et al. [5] have also reported their phototherapy patient population of 36 patients, during the pandemic. The most common diagnoses that have received phototherapy during this period in their clinic were psoriasis, vitiligo and mycosis fungoides. They did not report on the modality that has been used. Only one of their patients have been diagnosed with the coronavirus [5].

Spigariolo and Piccinno [6] reported the patients who have received phototherapy during the lockdown period. They had a total of 92 patients who have been receiving phototherapy before March 3, 2020. This number declined to a total of 9 with the lockdown period: 3 mycosis fungoides, 2 psoriasis, 2 pitriasis rubra pilaris and 2 eczema. Narrowband UVB was used in 6 of these patients, whereas PUVA was used in 3. They selected their patients based on age, comorbidities, transportation method and disease severity [6].

Costa et al. [7] have surveyed the patients who have been receiving phototherapy right before the pandemic. Of their 86 patients, only 19% wished to continue their therapy. Ninety-five percent of the patients who have stopped attending the phototherapy sessions, either by their own wish or on medical recommendation, had relapse of their disease [7].

## Conclusion

In alliance with the previous literature, our patient population also revealed that the risk of disease transmission due to phototherapy sessions is quite low. On the contrary, relapse risk is high if the treatment is stopped. Therefore, we suggest that phototherapy modalities should be continued in necessary patients during this period given that the protective precautions can be applied in the phototherapy units.

## Ethics

**Ethics Committee Approval:** The approval of Istanbul University-Cerrahpasa, Cerrahpasa Faculty of Medicine Ethics Committee was taken before initiating the study (approval number: 103633, date: 02.06.2021).

**Informed Consent:** Retrospective study.

**Peer-review:** Externally and internally peer-reviewed.

## Authorship Contributions

Surgical and Medical Practices: D.Ö., T.K.Ü.U., Z.K., Concept: D.Ö., T.K.Ü.U., Z.K., Design: D.Ö., T.K.Ü.U., Z.K., Data Collection or Processing: D.Ö., T.K.Ü.U., Analysis or Interpretation: D.Ö., Literature Search: D.Ö., Writing: D.Ö., T.K.Ü.U.

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