Mycosis fungoides during the COVID-19 pandemic: a teledermatology study

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During the current coronavirus disease 2019 (COVID-19) pandemic, patients with malignancies like primary cutaneous lymphomas (PCLs) are considered at high risk for severe disease progression given their underlying condition. Mycosis fungoides (MF) is a type of PCL that often needs lifelong treatments, including immunosuppressive drugs that predispose patients to catastrophic COVID-19 outcomes. Accordingly, several issues are to be addressed in the management of patients with MF. First of all, patients with this chronic condition may lose access to healthcare services such as phototherapy and inpatient treatments like electron beam therapy. Secondly, the patients' anxiety of becoming infected while referring for the follow-up visits might impair their adherence to treatments. Finally, the current situation may affect the management strategies of dermatologists adopted for MF patients.

We decided to perform this teledermatology study to assess the clinical condition of patients with MF in our referral center. We also evaluated patients' perceived anxiety during the COVID-19 pandemic based on the Corona Disease Anxiety Scale (CDAS). Our results demonstrated that lockdown could influence adherence to treatment modalities (especially phototherapy) in these patients.

Keywords: mycosis fungoides, cutaneous T-cell lymphoma, COVID-19, anxiety

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INTRODUCTION

During the current coronavirus disease 2019 (COVID-19) pandemic, patients with comorbidities and chronic diseases are more susceptible to severe forms of COVID-19 [1,2]. Recently, several studies have investigated the condition of patients with skin disease during the COVID-19 pandemic [3,4].

Primary cutaneous lymphomas (PCLs) are non-Hodgkin's lymphomas that do not have extracutaneous involvement at the time of initial diagnosis and are localized to the skin [5].

Mycosis fungoides (MF) represents the most prevalent type of cutaneous T-cell lymphomas (CTCLs), originating from skin-homing mature T-cells [6]. MF is initially characterized by patches and infiltrated plaques on the skin that eventually evolve into tumoral lesions [7]. Patients with MF often need lifelong treatments, including immunosuppressive drugs that predispose patients to catastrophic COVID-19 outcomes [8].

Several issues are to be addressed in the management of patients with MF during the COVID-19 pandemic. First, patients with this

chronic condition may lose access to healthcare services such as phototherapy and inpatient treatments like electron beam therapy. Secondly, the patients' anxiety of becoming infected during the follow-up visits might impair their treatment adherence. Finally, the current situation may affect dermatologists' management strategies.

Considering the risk of COVID-19, the treatments that are currently used for MF management can be categorized as low-risk (topical agents, oral antibiotics, and oral antipruritics), intermediate-risk (oral retinoids like bexarotene, acitretin, and isotretinoin; methotrexate; oral steroids; vorinostat; and alpha or gamma interferons), and high-risk (chemotherapic agents). Skin radiotherapy, photopheresis, and office-based UV therapy are high-risk because of travel. On the other hand, according to the WHO/EORTC classification, patients with early MF (75% of all MF patients) and MF variants are considered low-risk with normal life expectancy but lower quality of life due to skin symptoms such as pruritus and pain as well as the emotional disturbance [6].

In the current study, we aimed to assess the clinical condition of patients with MF in our referral center by teledermatology and to ask them about the type of treatment and prevention strategies.

PARTICIPANTS AND METHODS

This study was performed in two referral dermatology centers (Loghman-e-Hakim and Shohada-e-Tajrish hospitals) in Tehran, Iran. After evaluation of our electronic data, we contacted 20 patients with confirmed MF either by phone call (by one of our third-year dermatology residents) or other social media applications (WhatsApp). The phone calls were made during the COVID-19 pandemic from August 24th to September 21st, 2020). We tried to contact 41 patients with a definite diagnosis of MF, among whom 20 were available and consented to participate in our study.

We asked the patients about their latest clinical stage, ongoing treatment, and adherence to social distancing healthcare principles. We also evaluated patients' perceived anxiety during the COVID-19 pandemic based on the Corona Disease Anxiety Scale (CDAS) [9]. The results were reported in physical, psychological, and total grades. The total score in each part correlates with the patient's anxiety about COVID-19 and its impact on their physical and psychological conditions. The baseline characteristics of the patients are summarized in Table 1.

Table 1. Demographic and clinical characteristics of the patients who participated in this telemedicine study

Age (year) Mean±SD	46.5 ± 15.5
Disease duration (years) Mean±SD	7.41 ± 7.45
Gender	
Female	9 (45%)
Male	11 (55%)
Job (remote)	15 (75%)
MF type	
Patchy	9 (45%)
Plaque	10 (50%)
Tumoral	1 (5%)
Active skin lesions	14 (70%)
Skin lesions' exacerbation	3 (15%)
Pruritus (yes)	9 (45%)
Pruritus aggravation (yes)	7 (35%)
Teatments	
Topical therapy (yes)	6 (30%)
Phototherapy	5 (20%)
Retinoids	3 (15%)
Interferons	2 (1%)
No treatment	4 (2%)

Numbers show the number and percentage of cases in each condition.

RESULTS

A total of 20 patients participated in this telemedicine study. Most (95%) of our patients were in the early stages of MF (IA and IB). At the time of the survey, skin lesions were present in 14 (75%) cases. Only 3 (15%) patients reported skin lesions' exacerbation since the beginning of the pandemic, two of whom were on both topical and systemic treatment. In addition, nine (45%) cases complained of pruritus exacerbation. Among them, seven (35%) noted increased severity of pruritus over the last three months. In this group, four cases were receiving phototherapy, which was discontinued subsequently due to lockdown conditions.

Overall, 5 (20%) patients discontinued their treatment. All of these patients were receiving phototherapy, while patients with topical or oral systemic therapy remained adherent to their treatment. Regarding the COVID-19 precautions, hand washing (more than 20 times a day) was the

Table 2. Perceived anxiety during COVID-19 pandemic based on Corona Disease Anxiety Scale (CDAS)

Psychologic grade	
None or mild	14 (70%)
Moderate	6 (30%)
Severe	0 (0%)
Physical grade	
None or mild	10 (50%)
Moderate	10 (50%)
Severe	0 (0%)
Total grade	
None or mild	20 (100%)
Moderate	0 (0%)
Severe	0 (0%)

Numbers show the number and percentage of cases in each condition.

most prevalent, whereas strict home quarantine was the least frequent preventive measure during the preceding three months.

Only one patient developed COVID-19 in this period. He was a 25-year-old man, known case of MF (stage IB) for eight years, who had discontinued his treatment six months earlier without consulting his dermatologist resulting in generalized skin lesions (patch and plaque) with considerable pruritus. On March 10th, 2020, he developed fever, chest tightness, and dry coughs. Subsequently, a polymerase chain reaction (PCR) test confirmed the diagnosis of COVID-19. His COVID-19 symptoms improved by supportive care while his skin lesions became exacerbated.

Regarding the psychological subscale of the anxiety scores, 14 (70%) patients reported none or mild anxiety, while 6 (30%) mentioned moderate anxiety, which could have influenced their psychological status. Furthermore, in the physical grade, half of our patients reported none or mild anxiety, and the other half had moderate anxiety, which may affect their physical condition (Table 2).

DISCUSSION

In this teledermatology study, we reached out to 20 patients with primary CTCL six months after the onset of the COVID-19 pandemic. We interviewed them about their disease status, adherence to healthcare protocols, and perceived anxiety during the COVID-19 pandemic. To our knowledge, this is the first study to address this clinical and psychosocial issue with the teledermatology design. According to the results, MF does not seem to be a major factor affecting the transmission of COVID-19.

MF and COVID-19 can interact via several mechanisms. The immune dysregulation and relative suppression of adaptive immunity in CTCL explain PCL patients' milder or same susceptibility to COVID-19 compared to healthy subjects [5]. Therefore, PCL diagnosis itself does not represent a predisposing factor to severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) infection [10]. However, patients with CTCL may have other risk factors for catastrophic outcomes of COVID-19 such as older age, organ failure (renal, cardiac, or respiratory), lymphopenia, diabetes, hypertension, aggressive immunosuppressive treatment, and advanced/aggressive disease. Therefore, proper screening for these comorbidities is crucial in patients with CTCL [11]. Moreover, since PCL patients with controlled disease have less propensity to infections than untreated patients, timely treatment of underlying conditions prevents a worsening in the outcome [12].

As expected, our results highlight the impact of lockdown on non-adherence to treatment modalities (especially phototherapy) in MF patients. This should draw attention to proper patient education and telemedicine strategies to guide patients toward favorable compliance with their treatment. The crucial step to protect patients with PCL should be focused on disease prevention according to CDC guidelines. Some of these recommendations include: considering a hotline to answer patients' questions, self-isolation, use of protective masks, and strict handwashing. Patients with late-stage disease should be educated that they are more immunosuppressed and susceptible to infections [5]. According to our findings, almost all patients were adherent to frequent hand washing, whereas self-isolation was less prevalent.

For patients who receive PUVA and NB UVB treatments, the decision should be made depending on the hospital situation [5]. A recent paper proposed that the abovementioned low-risk therapies that can be used at home should be continued for all patients. The authors stated that for treatments such as UV light therapy and total body electron beam radiation therapy, the risks of travel and exposure might be more than their benefit [2]. Like most photobiology units, our center was closed during the lockdown. Therefore, five patients

discontinued their treatment and experienced exacerbation of their condition.

Although the patients receiving systemic therapies, such as the immunosuppressive ones, did not show a predisposition to severe COVID-19 in our study, close monitoring, psychosocial support, and strict adherence to healthcare protocols are recommended in MF patients. It should be emphasized that for patients with limited disease, only low-risk therapies are recommended.

CONCLUSION

Higher perceived anxiety can exacerbate pruritus, necessitating appropriate patient support and treatment. Regular teledermatology visits are recommended for those at higher risk of COVID-19, averting the need for risky outpatient visits during the pandemic.

Conflict of interest: None declared.

REFERENCES

1. Liang W, Guan W, Chen R, et al. Cancer patients in SARS-CoV-2 infection: a nationwide analysis in China. Lancet Oncol. 2020;21(3):335-7.
2. Zic JA, Ai W, Akilov O, et al. United States Cutaneous Lymphoma Consortium recommendations for treatment of cutaneous lymphomas during the COVID-19 pandemic. J Am Acad Dermatol. 2020;83 (2):703-4.
3. Shahidi-Dadras M, Abdollahimajd F, Ohadi L, et al. COVID-19 in pemphigus vulgaris patients with previous rituximab therapy: a tele-medicine experience. J Dermatolog Treat. 2020:1-2.
4. Amerio P, Prignano F, Giuliani F, et al. COVID-19 and psoriasis: Should we fear for patients treated with biologics? Dermatol Ther. 2020;33(4):e13434.
5. Elmasry MF, Youssef R, Elbendary A, et al. Cutaneous lymphomas and COVID-19: What is known so far? Dermatol Ther. 2021;31 (4):e14463.
6. Papadavid E, Scarisbrick J, Ortiz Romero P, et al. Management of primary cutaneous lymphoma patients during COVID-19 pandemic: EORTC CLTF guidelines. J Eur Acad Dermatol Venereol. 2020;34(8):1633-6.
7. Li JY, Horwitz S, Moskowitz A, et al. Management of cutaneous T cell lymphoma: new and emerging targets and treatment options. Cancer Manag Res. 2012;4:75-89.
8. Papadavid E, Scaribrick J, Ortiz Romero P, et al. Management of primary cutaneous lymphoma patients during COVID-19 pandemic: EORTC CLTF guidelines Maarten Vermeer. J Eur Acad Dermatol Venereol. 2020;4 (8):1633-6.
9. Alipour A, Ghadami A, Alipour Z, et al. Preliminary validation of the corona disease anxiety scale (CDAS) in the Iranian sample. J Health Psychol. 2020;8(32):163-75.
10. Du SQ, Yuan W. Mathematical modeling of interaction between innate and adaptive immune responses in COVID-19 and implications for viral pathogenesis. J Med Virol. 2020;92(9):1615-28.
11. Blaizot R, Ouattara E, Fauconneau A, et al. Infectious events and associated risk factors in mycosis fungoides/ Sézary syndrome: a retrospective cohort study. Br J Dermatol. 2018;179(6):1322-8.
12. von Lilienfeld-Toal M, Vehreschild JJ, Cornely O, et al. Frequently asked questions regarding SARS-CoV-2 in cancer patients—recommendations for clinicians caring for patients with malignant diseases. Leukemia. 2020;34(6):1487-94.