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**COVID-19: Important Updates and Developments**  
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# Management strategies for dermatomyositis during the coronavirus disease 2019 outbreak

Zixin Pi, MD, Pan Chen, MD, Yi Zhan, MD, PhD\*, Rong Xiao, MD, PhD\*

*Department of Dermatology, The Second Xiangya Hospital of Central South University, Changsha, China*



**Abstract** In late 2019, the coronavirus disease 2019 (COVID-19) broke out in Wuhan and then spread over China, which greatly affected the medical practices and health care systems. With most of the hospital's outpatient services closed, the routine clinical diagnosis and treatment for patients with dermatomyositis has been disturbed. We conducted telephone follow-up for 52 patients to know the changes in the condition and the continuation of drug therapy and to ensure the continuity, safety, and effectiveness of the treatment of patients with dermatomyositis during COVID-19.

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## Introduction

In December 2019, a viral pneumonia, the coronavirus disease 2019 (COVID-19), broke out in Wuhan and quickly spread to the other parts of the world, which aroused widespread concern.<sup>1</sup> The pathogen of this viral pneumonia is SARS-CoV-2, which is highly infectious through respiratory droplets and close contact spread, and susceptible groups are all groups.<sup>2</sup> To prevent the spread of COVID-19, people have stayed home, going out as little as possible.

Dermatomyositis (DM) is a rare refractory autoimmune disease characterized by pathognomonic cutaneous manifestations and may or may not parallel myositis combined with other systems' involvement.<sup>3</sup> The patients with DM have a high risk of developing interstitial lung disease (ILD)<sup>4</sup> and malignancy. Due to the use of systemic corticosteroids and/or immunosuppressive agents, patients with

DM are more susceptible to infection than healthy individuals. Besides, Beydon et al have reported a case of COVID-19 that presented as acute myositis.<sup>5</sup> The latest research also revealed three immunogenic linear epitopes with high sequence identity to SARS-CoV-2 proteins in patients with autoimmune DM, which means that latent exposure to SARS-CoV-2 might promote musculoskeletal autoimmune disease development<sup>6</sup>; therefore, the patients with DM should be a priority group for COVID-19 prevention.

## Condition Assessment

We followed up with telephone interviews of 52 patients with DM who were hospitalized in our institution from January 2019 to January 2020, of whom 11 patients were lost to follow-up because the phone number was not available or the patient refused to answer, and 7 patients had died. Among the 7 deceased, none of the patients had developed COVID-19. Two patients died of severe pneumonia and respiratory failure shortly after discharge from our hospital in 2019. Four patients died of nasopharyngeal carcinoma, and one patient

\* Corresponding authors.

E-mail addresses: misseven69@csu.edu.cn (Y. Zhan),  
xiaorong65@csu.edu.cn (R. Xiao).

died of lung carcinoma. None of the 34 followed-up patients developed COVID-19. The results are shown in Table 1 and the following problems were found:

- (1) Although the vast majority of patients did not interrupt their treatment, the therapeutic schedule was not properly guided and adjusted, which led to side effects such as increased liver enzymes and swollen feet.
- (2) The patients who were combined with interstitial lung disease (ILD) or malignancy were afraid of being infected with pneumonia during COVID-19 pandemic due to their high susceptibility, which caused a great psychological burden to them.
- (3) Twenty-two patients chose to go to the hospital for further consultation despite the risk of infection, and 12 patients did not communicate with the doctor during the epidemic. No one chose telemedicine for further consultation among the follow-up patients.

**Table 1** The followed-up results of 34 patients.

Results	Numbers of cases (N=34)
Gender	
Women	26
Men	8
Age (28-66 years)	
28-49 years	17
50-66 years	17
Complication	
interstitial lung disease	24
malignancy	4
Continuous therapy	
yes	33
no	1
*Therapeutic drugs	
systemic corticosteroids	
prednisone	13
methylprednisolone	19
antimalarials	
hydroxychloroquine	16
immunosuppressive agents	
methotrexate	2
cyclophosphamide	9
tacrolimus	9
mycophenolate mofetil	2
azathioprine	2
antifibrotic drugs	
pirfenidone	1
Condition of patients during COVID-19	
improve	26
worse	4
unchanged	4
Medical visit approach	
go to hospital	22
telemedicine	0
none	12

\*most drugs were used in combination.

## Patient Management

Due to the COVID-19 pandemic, patients with DM have difficulty obtaining a continuous, safe, and effective therapy, especially those who live in the countryside. Telemedicine is a convenient and safe option for patients and doctors.<sup>7</sup> It is necessary for doctors to contact their patients more closely and keep a watchful eye on patients' condition and provide medical guidance and psychological counseling to them. It is not necessary for patients to go to the hospital for routine referral at the risk of infection when their condition is stable, and telemedicine is a better choice. Self-monitoring of patients is also significant; they should pay more attention to the following points: (1) daily monitoring of body temperature; (2) regular monitoring of blood pressure and blood sugar; (3) observing side effects; (4) maintaining social distance; and (5) accomplishing room ventilation and disinfection.

Telemedicine cannot solve all problems, especially when the condition of patients get worse and is life-threatening; therefore, guiding patients with DM whether and when to go to the hospital for therapy needs to be taken seriously. We recommend that patients should go to the hospital for therapy when the following manifestations occur: (1) cutaneous manifestations (Gottron papules, Gottron sign, and heliotrope rash) become worse, and myasthenia increased or presented as dysphagia, dysphonia, and dyspnea, and there is aggravated arthralgia; (2) serious medication side effects developed; (3) there is high fever and severe infection.

## Discussion

Telemedicine is a convenient method for communication between doctors and patients. Many patients may be unaware of such an option for medical help. It is necessary to expand the use of telemedicine to reduce the risk of infection and prevent the spread of COVID-19. For patients with severe conditions, telemedicine is not a good choice because it has limitations in the diagnosis and treatment of serious diseases. Patients with serious diseases of unstable condition need timely and effective treatment provided by hospital.

## Conclusions

In the process of prevention and control of COVID-19, patients with DM as a group need special attention. The management of patients is meaningful and challenging during the outbreak of COVID-19.

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## Conflict of Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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