



# TELEDERMATOLOGY AS A TRIAGE METHOD DURING THE COVID-19 PANDEMIC AND EARTHQUAKE AFTERMATH IN ZAGREB

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**SUMMARY** – The COVID-19 pandemic has put a tremendous burden on the medical community and brought a great number of accompanying issues, as well as other closely associated diseases. The response to this public health and medical challenge was outstanding. However, dealing with the COVID-19 pandemic and various issues brought on by the earthquake was successfully facilitated by the use of tele dermatology. This innovative technology enabled dermatovenereologists to stay in continuous touch with their patients and provide much needed care and assistance in difficult circumstances caused by several crises.

**Key words:** *COVID-19; Earthquake; Tele dermatology*

## Introduction

After the World Health Organization declared coronavirus disease 2019 (COVID-19) a global pandemic on March 11, 2020, it became clear that health professionals worldwide were facing a severe and unprecedented challenge.

On February 25, 2020, Croatia registered the first case of COVID-19, and epidemiological measures, which included social distancing and quarantine, were promptly enforced on March 10, 2020 by the Croatian National Civil Defense Headquarters<sup>1</sup>.

## Clinical Practice in the Department of Dermatology and Venereology

Specialist triage teams were formed and COVID-19 screening was provided to our patients and medical personnel prior to entry to the Sestre milosrdnice University Hospital Center (UHC). Patients with mild and moderate forms of COVID-19 were ordered to self-isolate in their homes and did not receive medical attention at the Sestre milosrdnice UHC, unless complications arose.

The vast majority of consultations were done using smartphones or webcam-enabled computers (tele dermatology) in order to limit physical contacts between dermatologists and their patients<sup>2,3</sup>. This method of communication has been used routinely at our department since 2005, specifically for patients with an established diagnosis who needed a follow-up. During the COVID-19 pandemic, it was also used for routine follow-ups, as well as for urgent cases of

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life-threatening dermatoses<sup>4</sup>. The versatility of this method, its simplicity, speed, cost-effectiveness, direct on-demand consultation, and social distancing made teledermatology ideal in the time of COVID-19 pandemic. Although issues such as low-quality photos, privacy, and ethical concerns remain, the benefits of this method greatly outweigh negative issues<sup>5</sup>.

### Earthquake – Second Unpredicted Disaster

On March 22, 2020, Zagreb was struck by a 5.3 magnitude earthquake in the midst of the COVID-19 pandemic. A great number of buildings were seriously damaged, including many leading medical institutions; therefore, our Department of Dermatology took over the responsibility for some of their displaced patients. Teledermatology proved to be of crucial importance in these circumstances, since the workload was overwhelming and there was a great risk of facilitating the spread of coronavirus.

### The Role of Teledermatology in Crisis Setting

Three to six weeks after the earthquake, the number of teledermatology consultations dramatically increased to more than 120 *per day*. Prior to the earthquake, the number of these types of consultations was on average between 10 and 20 daily.

There was also a significant increase in the number of patients with stress-induced acute urticaria, which could be directly associated with the earthquake stress. This form of urticaria does not regress with the use of antihistamines; it resolves with the use of anxiolytics and tricyclic antidepressants instead. Since urticarial lesions may also appear simultaneously with systemic symptoms of COVID-19, these lesions represent a diagnostic problem in teledermatology. We also recorded an increased number of patients with psoriasis, nonsegmental vitiligo, and contact dermatitis, all of which could be triggered by extreme stress.

### Increase in the Use of Telemedicine

Despite having a very large number of inhabitants (one quarter of the population in Croatia) over the age of 65 (which is the highest age risk group), and being one of the Italy immediate neighbors, Croatia had a comparatively lower number of patients that tested positive to coronavirus, and even lower number of severe cases of COVID-19. The key of our success might be the usage of direct on-demand telemedicine to forward triage in patients with cutaneous diseases that could be caused by severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) infection, earthquake, or other. This approach provided secure screening to our patients, as well as protecting patients, health professionals, and the community from SARS-CoV-2 exposure. Access to the Sestre milosrdnice UHC was provided only for emergency cases and cancer patients.

### Conclusion

Many aspects of the kinetics of SARS-CoV-2 replication and host responses are still not elucidated. At this time, it is unknown for how long antibodies persist following SARS-CoV-2 infection and if the presence of antibodies confers protective immunity.

Health professionals in health care centers might represent an important source of infection if they are in the pre-symptomatic stage (a few days before symptoms occur) or in symptomatic stage, and that is why we performed rapid serologic testing in asymptomatic health workers for COVID-19 during the COVID-19 pandemic in Croatia. We screened 50 health workers at our Department of Dermatology and Venereology, Sestre milosrdnice UHC with rapid serologic test Architect i2000SR analyzing COVID-19 associated-IgG, and all tests were negative. This suggests that our health professionals were very well protected.

In conclusion, teledermatology should be recognized as an important technology which enables greater access to patient care and for preserving health care provider safety, especially in a crisis setting.

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## Sažetak

### TELEDERMATOLOGIJA KAO METODA TRIJAŽE TIJEKOM PANDEMIJE COVID-19 I NAKON POTRESA U ZAGREBU

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Pojava pandemije COVID-19 stvorila je golem pritisak na medicinsku zajednicu i donijela velik broj popratnih problema, kao i brojne usko povezane bolesti. Odgovor na ovaj javnozdravstveni i medicinski izazov bio je izvanredan. Suočavanje s pandemijom COVID-19 i raznim tegobama izazvanim potresom olakšana je upotrebom teledermatologije. Ova inovativna tehnologija omogućila je dermatovenerozima da ostanu u trajnom kontaktu sa svojim bolesnicima i pruže prijeko potrebnu njegu i pomoć u izvanrednim okolnostima uzrokovanim višestrukim krizama.

Ključne riječi: *COVID-19; Potres; Teledermatologija*