

Teledermatology and COVID-19

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The outbreak of the Coronavirus disease 2019 (COVID-19) occurred in Wuhan City, in the province of Hubei, China, in early December 2019. Rapidly spreading around the world COVID-19 became a serious disease of international concern, and on March 11th 2020 COVID-19 was declared a pandemic by the World Health Organization. Different control and prevention strategies were implemented worldwide to prevent a rapid transmission.

Health care settings are known locations of significance as sources of viral transmissions (1). In Italy, hospitals have been places with very high risk of COVID-19 transmissions. In Denmark, one third of all people infected with COVID-19 in the entire country were healthcare workers. Therefore, different strategies regarding regulations in health care settings have been suggested, and continuously changed, based on availability of testing and personal protective equipment.

In the field of dermatology most visits are outpatients and non-emergent. Looking at flow, dermatology clinics are high volume clinics with exposure to many individuals. The latter combined with our knowledge of asymptomatic carriers who can shed viral particles weeks before (or without) symptoms force us to develop precautional strategies.

In a recently published letter to the Editor, Villani et al. (2) suggested 4 measures in dermatological practices. Amongst these was the suggestion to cancel all elective outpatient visits and replace them with teledermatological visits. The teledermatological visit consists of store-and-forward pictures, live video consultations, or a combination of both. These measures are now also supported by the new guidelines from Centers for Disease Control and Prevention and the American Academy of Dermatology (3).

The COVID-19 pandemic has caused an increase in the use of telemedicine in ways we have never seen before. The

COVID-19 pandemic forced us to drop regular face-to-face consultations from one day to the next, and replace them with telephone consultations and telemedicine (4). Earlier, there was often a resistance to the use of telemedicine, but the COVID-19 pandemic has really accelerated the use of it (5).

The increased utilization of telemedicine has provided more knowledge about the benefits and obstacles of the use of telemedicine compared with face-to-face interactions. Research has shown that telemedicine consultations start less structured and organized than face-to-face consultations. The lack of structure in the beginning of the telemedicine consultation is due to disturbing factors such as establishing the video connection, adjusting volume and adjusting computer screens. However, already after a very short time the structures of telemedicine and face-to-face consultations get similar, and patients are in general very satisfied with telemedicine consultations. Teledermatology is now considered a dermatological subspecialty that combines communication technologies with information to prevent, diagnose, treat, monitor, research and educate over a distance. Last year the Nordic Forum for Dermato-venereology launched a thematic issue on teledermatology, including reports on the use of teledermatology in the Nordic countries and Greenland (6). The thematic issue reported on current practices in our countries, and the use of different types of teledermatology applications. These different types of teledermatology models include direct communication between the patient and the dermatologist, communication between the general practitioner/nurse and the dermatologist or communication as second opinion amongst dermatologists.

Teledermatology can be provided through different modalities. Real-time video consultation between seeker and provider gives the possibility to further explore the medical history and ask clarifying questions. This modality has the drawbacks of being more time-consuming and being dependent on the quality of the connection (the Internet speed). The modality

of the asynchronous store-and-forward refers to the use of sent clinical or dermoscopic images. The quality of store-and-forward images is often better, but the limitation of this modality is the lack of possibility of asking clarifying questions before a possible second consultation.

Combinations of both modalities are also possible based on what technical communication equipment is available. Availability of both options are somehow a necessity for providing safe and reliable care covering the entire spectrum of dermatological diseases. The use of teledermatology is widespread across the world and several studies have shown that this is a good alternative to regular consultations with a dermatologist, mostly because of its emphasis on visual diagnosis (7–9). Teledermatology has proved to provide accurate diagnosis and it reduces the time for treatment generating high patient satisfaction. The possible savings in health care expenses are substantial, as are possible time savings through the reduced need of travels. Teledermatology also provides better access to specialist expertise irrespective of geography. The limitations include both the technical aspects with quality of the connection and of the images provided, and the aspect of lost/missing information which is more easily achieved through a face-to-face consultation.

Until the COVID-19 pandemic, teledermatology was often used when there was a large geographical distance between the patient and the dermatologist, for example to provide specialist dermatological care in remote areas (10, 11). COVID-19 has changed this and telemedicine is now also used for patients living in the same city or area as the dermatologist, in order to reduce the risk of COVID-19 transmission. During the COVID-19 pandemic new boundaries for telemedicine have thereby been explored (12). During COVID-19 more and more dermatologists are being forced to get experience from teledermatology, because of the regulations and precautions taken during this pandemic. This experience should, in our opinion, possibly influence a higher integration of teledermatology in our daily clinical practice in the future. Hopefully,

we continue to use teledermatological modalities to a high degree, also when the COVID-19 pandemic fades away (5). Furthermore, continuous development of mobile phone-based applications and modalities is necessary to provide the best way of telemedical working tools (12).

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