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The impact of the COVID-19 pandemic on dermatologic practice: an Italian survey

Background: Since December 2019, the global population has been experiencing an unprecedented challenge due to Corona virus disease (COVID-19). A pandemic was declared by the World Health Organization on March 11th 2020, with an escalation of new cases worldwide. Dermatology units experienced a reorganization of regular activity, also providing clinical diagnosis and medical assistance to COVID-19-positive patients who developed cutaneous manifestations. *Objective:* To evaluate the impact of the COVID-19 pandemic on Italian dermatologic clinical practice. *Materials & Methods:* This was a prospective online survey, consisting of a questionnaire with 35 multiple-choice questions uploaded on the website of the Italian Society of Dermatology and Venereology - SIDeMaST. *Results*: A total of 136 dermatologists, 78 women (57%) and 58 men (43%), participated in the survey. The mean age was 58 ± 14 years. In total, 60% of participants reported an impact of the pandemic on their practice, in most cases consisting of a remarkable reduction in routine clinical activity (58%). Concern regarding possible infection was evaluated with a score ranging from 0 (no concern) to 5 (extremely concerned): the fear of becoming infected was high ($\geq$3 in 40%), as was the fear of infecting families, colleagues or patients ($\geq$3 points in 45%). *Conclusion:* The COVID-19 pandemic is having a strong impact on dermatology practice in Italy. The identification of critical points may help scientific societies to improve the clinical scenario and create specific strategies to overcome the emergency.

Key words: dermatology, COVID-19, survey, impact

Since December 2019, the global population has been experiencing an unprecedented challenge due to Corona virus disease (COVID-19). The first cases of pneumonia of unknown origin were registered in Wuhan city, China, and the pathogenic agent was detected by the Chinese Centre for Disease Control and Prevention on January 7th 2020, then named "severe acute respiratory syndrome coronavirus 2" (SARS-CoV-2) [1,2]. A pandemic was declared by the World Health Organization (WHO) on March 11th 2020. The outbreak of the disease has led to an escalation of new cases worldwide, and invariably all countries have enacted a lockdown, social distancing and quarantine in order to limit close contact with positive patients. National health systems have been experiencing a deep crisis due to the high number of COVID-19 patients and the consequent lack of proper devices and personal protective equipment (PPE). Italy and Spain registered the highest number of cases in Europe, overtaking China itself [3]. In order to face the emergency, many specialists, including dermatologists, had to provide back-up assistance or were on duty in COVID-19 units. Dermatology units experienced a reorganization of routine activity, also providing medical assistance to COVID-19-positive patients with cutaneous symptoms [4].

The aim of the present survey study was to investigate the impact of the COVID-19 pandemic on dermatologic practice in a cohort of Italian specialists.

Materials and methods

This was a prospective online survey study evaluating the impact of the COVID-19 pandemic on Italian dermatologic clinical practice. The survey consisted of a questionnaire, available on the official website of the Italian Society of Dermatology and Venereology - SIDeMaST. Only registered members (dermatology residents or board-certified dermatologists) could complete the survey. Data collection was anonymous. The questionnaire consisted of 35 multiple-choice questions, evaluating three main sections: (1) personal data; (2) current activity and personal protective equipment during the COVID-19 pandemic; and (3) future perspectives. The survey, which was created by a working team of dermatologists and physicians (ED, ML, MT, GM), was performed between April 5th and 19th, 2020. The questions of the questionnaire regarding Section 1 are summarised in *table 1* table 1, while those of Sections 2 and 3 are illustrated in *table 2* table 2.

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Table 1. Main demographic data of the participants (Section 1).

Sex n (%)	
• Female	78 (57)
• Male	58 (43)
Age (years ± SD)	58 ± 14
Area of interest* n (%)	
• skin cancer	32 (24)
• inflammatory/autoimmune diseases	19 (14)
• paediatric dermatology	9 (7)
• surgery	8 (6)
• hair and nail diseases	6 (4)
• sexually transmitted disease	5 (4)
• laser	4 (3)
• aesthetic medicine	2 (1)
• allergology	2 (1)

** reported by 87/136 dermatologists*

Statistical analysis

Data collected from the survey forms were entered into an Excel spreadsheet (Microsoft Corporation, Redmond, Washington, United States). Descriptive statistics were carried out for data on demographics and professional information of the participants in the survey, as well as for answers regarding the impact of COVID-19 on the department and personal clinical practice, and views on the current situation and future perspectives. Parametric variables were expressed as mean and standard deviation, while non-parametric variables were expressed as median, minimum, and maximum values. Categorical variables were summarised as frequency and percentage. Statistical analysis was performed with STATA 13.0 (College Station, TX: StataCorp LP).

Results

A total of 136 dermatologists, 78 women (57%) and 58 men (43%), participated in the survey. The mean age was 58 ± 14 years (*table 1*). Most of the specialists worked in a university setting (54; 40%), followed by those working in public hospitals (18; 13%) and private practices (15; 11%). In total, 87/136 dermatologists reported a main area of interest, including skin cancer (32; 24%), inflammatory/autoimmune diseases (19; 14%), paediatric dermatology (9; 7%), surgery (8; 6%), hair and nail diseases (6; 4%), sexually transmitted disease (5; 4%), lasers (4; 3%), aesthetic medicine (2; 1%) and allergology (2; 1%) (*table 1*).

Data summarizing the main items of the survey regarding Sections 2 (current activity and personal protective equipment during the COVID-19 pandemic) and 3 (future perspectives) are summarised in *table 2*. Fifty-three of 136 (39%) dermatologists reported working in an institution with COVID-19-positive patients, 22% (30) having been tested for the virus and 3% (4) having been infected. Almost half of the participants declared that they had received adequate information from their institution on the use of PPE, including masks, gowns and gloves: 49/136 (36%) received documentation about this matter, 14/136 (10%) attended courses in the hospital, and three (2%) attended meetings in their own unit. Of the participants, 13% evaluated COVID-19-positive patients.

An impact of the pandemic on clinical practice was reported by 60% (82) of participants, in most cases relating to a remarkable reduction in their routine activity (58%). The rate of reduction since March 2020 ranged between 75% and 100% in 30% of participants and was halved by 19%. Of the participants, 77/136 (57%) reported appointment cancellations from patients, while 66/136 (49%) cancelled appointments. Only 20% of dermatologists reported concern regarding possible legal action from patients for postponed appointments.

Concern regarding possible infection transmission was evaluated with a score ranging from 0 (no concern) to 5 (extremely concerned): the fear of becoming infected was high (≥3 in 40%), as was the fear of infecting families, colleagues or patients (≥3 in 45%). In addition, 26 (19%) dermatologists decided to suspend their activity due to fear of infection.

In relation to future practice, 52% (71) of the participants thought that patients should wear PPE during consultations due to concern regarding close contact with patients as a source of infection, even though this may limit the examination (≥3 in 37% of cases) of the perioral area. Almost half of the participants (64; 47%) were in favour of teledermatology in the future, mainly for evaluation of inflammatory/autoimmune diseases (28; 21%).

Discussion

Italy registered a severe outbreak of COVID-19 cases, initially in Lombardy and in the northern areas, but then the epidemic spread to the entire country. It has been estimated that up to 20% of physicians have been infected by COVID-19 and more than one hundred deaths have occurred among health care providers [5]. At the start of the pandemic, COVID-19-positive patients were considered mostly under the charge of anesthesiologists, pneumologists, internists or emergency physicians; nevertheless, in addition, dermatologists, including residents, were asked to cover duties or provide back-up assistance in new COVID-19-dedicated units or in the emergency room [6, 7]. However, according to our survey, only 1% of the specialists were reported to be involved. Indeed, dermatologists are not accustomed to dealing with intensive care procedures, and support for trained specialists, or at least educational courses, are needed. Many physicians, especially those with part-time employment, do not have specific professional insurance coverage. However, there has been an increasing demand for dermatologic evaluations in suspected or clearly positive COVID-19 patients. In our survey, 13% of dermatologists evaluated COVID-19-positive patients. Recent papers have reported the onset of cutaneous symptoms in positive patients, including erythematous rash, urticaria, urticaria vasculitis, pruritus, painful or burning purple/reddish maculopapular and vesiculous lesions of the digits of the feet (chill burns) and chickenpox-like vesicles [4, 7-9]. An increase in drug reactions as well as worsening of previous conditions (acne, rosacea, eczema) has also been described [7].

Table 2. Data summarizing, in brief, questions regarding Section 2 (current activity and personal protective equipment during the COVID-19 pandemic) and Section 3 (future perspectives).

Questions	*n* (%)
Activity in a hospital with COVID-19 patients	
Yes	53 (39)
The dermatologist has been tested for COVID-19	
No	57 (42)
The dermatologist has been infected by SARS-CoV-2	
No	82 (60)
Colleague/s positive for COVID-19	
No	58 (43)
The dermatologist has received adequate information from her/his institution on the use of PPE	
No	19 (14)
A feeling of safety when working in her/his department during the COVID-19 pandemic	
(0= extremely unsafe; 5= extremely safe) <3	36 (27)
Satisfaction with the information and the equipment that the centre has provided	
(0= not at all satisfied; 5= extremely satisfied) <3	46 (34)
Lack of protective masks in qualitative and quantitative terms	
Yes	61 (45)
Routine health surveillance swabs among healthcare professionals	
Yes	15 (11)
Availability of serological tests (IgM and IgG) at her/his hospital to assess immunity status against COVID-19	
Yes	28 (21)
Number of surgical masks used on average per day	
< 3	74 (54)
Evaluation of the guidelines provided by the Society of Dermatology for the management of dermatological issues during the pandemic	
Yes	71 (52)
Evaluation of COVID-19 patients with cutaneous symptoms (*e.g.* rash, urticaria)	
Yes	18 (31)
Impact of COVID-19 pandemic on professional activity	
Yes	82 (60)
Type of impact	
Reduction of the activity	79 (58)
In the event of a decrease, by how much has the activity decreased since March 2020	
>50%	67 (49)
Appointment cancellations by the patients	
Yes	77 (57)
Decision to cancel appointments	
Yes	66 (49)
Concern about future legal action from patients	
Yes	27 (20)
Future necessity to wear PPE in the hospitals	
6-12 months	67 (49)
Necessity to test for COVID-19 in all asymptomatic physicians	
Yes	67 (49)
Fear of becoming infected	
(0= not scared at all; 5= extremely scared) ≥3	54 (40)
Fear of infecting colleagues, family and/or patients	
(0= not at all scared; 5= extremely scared) ≥3	52 (45)

Table 2. (*Continued*).

Questions	*n* (%)
Decision to suspend professional activity due to fear of infection	
Yes	26 (19)
Concern about future practice	
(0= not at all worried; 5= extremely worried) ≥3	49 (37)
Use of PPE by the patient during consultations (even if limiting the examination)	
Yes	71 (52)
Possible role of teledermatology in the near future	
Yes	64 (47)
If yes, field of application of teledermatology	
Skin cancer	22 (16)
Inflammatory/autoimmune diseases	28 (21)
Paediatric dermatology	6 (4)
Allergology	4 (3)
Hair and nail diseases	3 (2)
Sexually transmitted diseases	1 (1)

PPE: personal protective equipment.

Finally, it should be noted that many dermatologists are contacted by worried patients undergoing immunosuppressive or biologic therapies for chronic or neoplastic disease; in this setting, many therapies need to be adjusted [10, 11]. Italian hospitals experienced a dramatic organisational crisis, together with a sudden lack of resources, including ventilators and PPE [5]. Our data show the use of less than three surgical masks per day in 54% of cases, and 61/136 (45%) dermatologists experienced a lack of protective masks.

In order to minimise the number of people being referred to hospitals and reduce the use of PPE, many dermatology units underwent a reorganization of their activity with deferral of appointments for non-urgent clinical evaluations as well as surgical procedures. Some authors proposed guidelines to regulate the rescheduling strategy: excision of low-risk skin tumours such as basal cell carcinomas may be delayed by three to six months, and melanoma wide local excision by three months [12]. However, decisions vary considerably among the single centres. There is great concern regarding the primary excision of potential melanomas or high-risk lesions; the decision implies re-evaluation of recorded dermoscopic images and a large amount of time dedicated to phone calls and rescheduling. This will lead to a future burden of a greater number of procedures in the ensuing months. We therefore strongly believe that standardised protocols should be proposed by national societies and applied by specialists in order to regulate the procedures and protect dermatologists. Indeed, only half of the participants (74; 52%) declared that they had read the provided vade mecum.

The elevated reduction in the number of appointments has invariably had an impact on the residents' learning curve, causing a gap in their training; in our series, residents accounted for 17%, PhD students 14% and fellows 2%. All national and international meetings have also been cancelled. Therefore, webinar and on-line lessons should be strongly encouraged by chief residents and supervisors. On a positive note, the pandemic represents a rare chance to experience and practice within an emergency setting that provides a lifelong wealth of experience.

It is important to consider that only 22% of the dermatologists who completed our questionnaire were tested for COVID-19; 38% reported a lack of health surveillance with diagnostic swabs, while serological tests (IgM and IgG) were available only in 21% of cases. We strongly believe that an attentive programme of diagnostic swabs or serological examinations should be routinely performed in order to assess positive cases and uphold workers' safety. Indeed, it is well known that virus transmission may occur during the asymptomatic incubation period (up to 10-14 days) [13, 14]. Almost half of the participants (67; 49%) agreed to COVID-19 tests of all the asymptomatic physicians.

Muddasani *et al*. [15] performed scripted phone calls to 60 dermatology practices in the United States in order to assess the appointment availability, and reported that 16% of the practices were closed and 31% accepted only urgent cases. This is in line with our data, showing that 19% of dermatologists decided to suspend their activity due to the fear of becoming infected.

Currently, there is a great debate regarding possible future strategies to reduce the risk of new contagions. Telemedicine represents a possible diagnostic tool in dermatology, especially in a pandemic scenario, where a decrease in close contact between physicians and patients, as well as hospital crowding, is crucial [16]. However, legal issues, lack of reimbursement, risk of misdiagnosis and the fact that it is not possible to perform a global and accurate physical examination represent major limitations [17, 18]. Greater attention to the follow-up of patients with a prior diagnosis has been suggested [17]. In our survey, the dermatologists who were in favour of teledermatology (47%) considered its major role to be in inflammatory/autoimmune diseases (21%) and skin cancer (16%). The role of teledermatology is considered to be much less important for sexually transmitted diseases (1%) and appendage disorders (2%). However, it is now applied for specific tasks including delivery of laboratory tests.

A possible option in the near future is creation of COVID-19-free units based in both public hospitals and private settings. This strategy requires continuation of specific procedures that are currently being applied: pre-appointment evaluation of patients' medical history and temperature, use of PPE (masks, gloves, hand sanitizer), social distancing and proper sanitization of the environment. The participants in our survey agreed with the need for patients to wear PPE and masks for a further six and 12 months, in 28% and 21% of cases, respectively.

The limitations of the study are the relatively small sample size, which included only official members of the Italian Society of Dermatology (SIDEMAST), and the presence of missing data due to the lack of answers from participants. Moreover, the survey collected data from different Italian regions, experiencing diverse contagion peaks.

To the best of our knowledge, this is the first on-line survey evaluating the impact of the COVID-19 pandemic among dermatologists. We believe that gathering information among specialists is important to ameliorate future clinical practice and this view appears to be shared by our colleagues; indeed, only 3% of participants did not appreciate the questionnaire. Our sample of dermatologists included specialists from most regions of Italy and the Republic of San Marino, providing real-life data from the whole country.

Conclusions

The COVID-19 pandemic is having a strong impact on dermatology practice in Italy. The identification of critical points may help scientific societies and decision makers to improve the clinical scenario and create specific strategies to overcome the emergency. This is a battle that we have to fight together, as common strategies have the greatest impact on each individual practitioner and patient. The difference between failure and triumph is the creation of a great team. ■

Disclosure. *Conflicts of interest: none.*

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