

# Change in Allergy Practice during the COVID-19 Pandemic

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## Keywords

Allergy · Allergic disease · Allergic asthma · Allergy and immunology · COVID-19

## Abstract

**Background:** International guidelines in asthma and allergy has been updated for COVID-19 pandemic and pandemic has caused dramatic changes in allergy and immunology services. However, it is not known whether specialty-specific recommendations for COVID-19 are followed by allergists. **Objectives:** By conducting this study, we aimed to determine the attitudes and experiences of adult/pediatric allergists on allergy management during COVID-19. **Method:** We used a 20-question survey to elicit data from allergists (residents and pediatric and adult allergists registered to the Turkish National Society of Allergy and Clinical Immunology) across Turkey via e-mail. We analyzed the data statistically for frequency distributions and descriptive analysis. **Results:** A total of 183 allergists participated in the survey. Telemedicine was used for management of asthma (73%), allergic rhinitis (53%), atopic dermatitis (51%), chronic urticaria/angioedema (59%), drug hypersensitivity (45%), food allergy (48%), venom allergy (30%), anaphylaxis (22%), and heredi-

tary angioedema (28%). Thirty-one percent of the respondents discontinued subcutaneous immunotherapy (SCIT) during the COVID-19 pandemic. Thirty-four percent of the physicians reported interruption of systemic steroid use in asthma patients, and 25% of the respondents discontinued biological therapy. **Conclusions:** Allergists in Turkey have been using telemedicine at a high rate during the COVID-19 pandemic for asthma and rhinitis. The continuation rate of SCIT was low while the discontinuation rate of biologicals and systemic steroid use in asthma was high in Turkey. Our study results and learning from the experiences of other countries and specialties may help to optimize allergy practice and compatibility with international guidelines.

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## Introduction

Coronavirus disease (COVID-19), caused by severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2), was identified for the first time in December 2019 in Wu-

Edited by: H.-U. Simon, Bern.

han, China. It quickly spread around the world and has become a global pandemic [1]. SARS-CoV-2 is a highly contagious virus and social distance is the key intervention in reducing the virus's spread [1]. Therefore, urgent adjustments in health care, including the implementation of remote services, has been required to prevent the spread of the virus by providing social distance measures. International guidelines in asthma and allergy have been updated as a result of the COVID-19 pandemic and the pandemic has caused dramatic changes in allergy and immunology services [2–4]. Telemedicine, reduced allergy and clinical immunology services, and delay of elective procedures have been encouraged by guidelines to decrease face-to-face interactions. Continuation of asthma medications including inhaled corticosteroids and oral corticosteroids if prescribed, the use of written asthma action plans, and avoidance of nebulizers and spirometry are examples of other main recommendations [2].

Allergy and immunology clinics rapidly coordinated changes according to the guidelines' recommendations for the COVID-19 pandemic while trying to meet academic/health care needs in addition to providing safety to medical staff and patients. However, it is not known whether specialty-specific recommendations for COVID-19 are followed by allergists in our country. A better understanding of allergists' management plans and knowledge on recent guideline recommendations will help to implement a standardized algorithm for allergy and clinical immunology clinics during pandemics. The aim of this study is to determine the attitudes and experiences of adult/pediatric allergists regarding allergy management during the COVID-19 pandemic.

## Materials and Methods

A 20-item questionnaire in open-label and multiple choice formats was developed and sent to members of the Turkish National Society of Allergy and Clinical Immunology (TNSACI) by using the society e-mail network during the period of April to May 2020. Adult/pediatric allergists and residents with 1 or more years of clinical experience were included. We analyzed the data statistically for frequency distributions and descriptive analysis.

## Results

Out of 312 TNSACI members, 183 (58%) specialists and registrars practicing in adult ( $n = 77$ ) or pediatric ( $n = 106$ ) allergy responded to the e-mail by answering the questions. Physicians from different regions of Tur-

key and various practice settings such as private clinics ( $n = 7$ ), private hospitals ( $n = 7$ ), public hospitals ( $n = 16$ ), and academic institutions ( $n = 153$ ) completed the survey. Out of 183 hospitals, 143 hospitals (78%) had COVID-19 services. All of the participants reported that they took precautions for infection prevention and control at their hospitals. Participants were using national and international societies' guidelines and online services such as those of the TNSACI, the European Academy of Allergy and Clinical Immunology (EAACI), the World Allergy Organization (WAO), and the Global Initiative for Asthma (GINA) as resources for COVID-19 [1–5]. Telemedicine was used for the management of asthma (73%), allergic rhinitis (53%), atopic dermatitis (51%), chronic urticaria/angioedema (59%), drug hypersensitivity (45%), food allergy (48%), venom allergy (30%), anaphylaxis (22%), and hereditary angioedema (28%). Face-to-face visits were also preferred for asthma (25%), allergic rhinitis (27%), atopic dermatitis (28%), chronic urticaria/angioedema (35%), drug hypersensitivity (52%), food allergy (37%), venom allergy (69%), anaphylaxis (78%), and hereditary angioedema (63%).

### *Managing Allergen Immunotherapy during the COVID-19 Pandemic*

Only 21% of the respondents were continuing subcutaneous immunotherapy (SCIT) as usual during the COVID-19 pandemic. Fifty-eight (31%) respondents discontinued SCIT if the immunotherapy was in the up-dosing initial phase. SCIT injections were administered at 6-week intervals for a maintenance phase in 132 (72%) respondents.

### *Managing Drug and Food Allergies during the COVID-19 Pandemic*

During the COVID-19 pandemic, only 11 and 25 respondents reported continuation of oral challenge, skin testing, or blood testing in drug hypersensitivity and food allergy diagnosis, respectively. Other respondents postponed oral challenge or skin testing for drug/food allergy. Eighty-seven respondents (47%) continued desensitization in patients undergoing chemotherapy and/or with biological agent allergy.

### *Managing Asthma and Allergic Rhinitis during the COVID-19 Pandemic*

Thirteen percent of the physicians continued skin prick testing with commercial inhalant extracts. Thirty-one percent of the physicians sometimes performed skin prick testing. However, 56% of the physicians did not use

**Table 1.** Recommendations for noninfected individuals and compliance rates in Turkey during the COVID-19 pandemic

Recommendations	Compliance rates, %
Interruption of subcutaneous immunotherapy is not advised; especially in potentially life-threatening allergies, such as venom allergy, SCIT should be continued regularly [6].	21
The key recommendation for an accurate management of noninfected patients on biologicals targeting type 2 inflammation because of an underlying severe allergic disease is continuation of their drug regimen with close follow-up [7].	75
Tell patients, or their parent or carer, that they should continue biologicals because there is no evidence that biological therapies for asthma suppress immunity [3].	
Advise patients with asthma to continue to take their prescribed asthma medications, particularly ICS and OCS if prescribed [2].	100 (ICS) 66 (OCS)
Make sure that all patients have a written asthma plan [2].	81
Avoid use of a nebulizer due to the risk of transmitting infection to other patients and health care workers [2].	92

ICS, inhaled corticosteroids; OCS, oral steroids.

skin prick testing. All of the respondents continued asthma and allergic rhinitis medications including inhaled corticosteroids, long-acting  $\beta_2$ -agonists, Montelukast sodium, antihistamines, and nasal steroids. Thirty-four percent of the physicians reported interruption of systemic steroid use in asthma patients. Twenty-five percent of the respondents discontinued biological therapy in asthma patients without any symptoms or clinical signs of COVID-19. Eighty-one percent of the respondents used written asthma action plans for asthma follow-up. Ninety-two percent of the clinicians preferred inhalers, chambers, or spacers instead of nebulizers in case of emergency management of asthma attacks.

#### *Managing Primary Immunodeficiency during the COVID-19 Pandemic*

Ninety-three percent of the physicians continued the use of subcutaneous immunoglobulin replacement therapy in patients with a primary immunodeficiency. A summary of the recommendations and the compliance rate for the recommendations in Turkey is given in Table 1.

#### **Discussion/Conclusion**

The survey showed that allergists in Turkey are using telemedicine at a high rate during the COVID-19 pandemic for asthma and rhinitis, but face-to-face interviews were the preferred option for more severe allergic diseases such as anaphylaxis and hereditary angioedema.

**Table 2.** Internationally recommended adjustments for allergy and immunology practice to prevent discontinuation of immunotherapy and biologics [10, 11]

The risk-benefit ratio of home allergen immunotherapy should be carefully evaluated on a case-by-case basis and home allergen immunotherapy may be considered by prescribing self-injectable epinephrine at home. Patients receiving immunotherapy should clearly be informed of the risks and benefits and provide informed consent before recommendation of home allergen immunotherapy.

Schedule modification can be considered in patients receiving inhalant allergen immunotherapy for allergic rhinitis (e.g., the interval between injections can be 2 weeks in the initial phase and 6 weeks for maintenance).

Inhalant allergen immunotherapy for allergic rhinitis can be considered to be postponed during the COVID-19 pandemic in patients with avoidable exposure to a trigger (e.g., cat).

Venom immunotherapy should be initiated or continued for patients having severe systemic reactions. The injections interval can be 2–3 months in patients who are in the maintenance phase for at least a year.

Home administration of biologicals should be considered after the risks and benefits have been clearly discussed and informed consent has been documented.

When we examined the changes in other countries and specialties, we observed a similar reduction in face-to-face consultations and open offices in dermatology departments among countries with a higher COVID-19 prevalence, such as Italy and the USA [6, 7]. Outpatient

clinic face-to-face consultations were limited to new urgent patients with rheumatological diseases in Australia, and they switched nearly 80% of outpatient appointments to telemedicine [8]. This also caused a restriction and reduction of many diagnostic and therapeutic services [6, 7]. Direct involvement of disciplines other than infectious disease such as dermatology for COVID-19 patient care in countries with the highest incidence also had an impact on cancellation of elective services [6].

Physicians may be concerned about the safety of initiation and continuation of systemic steroids and biologic therapies during the COVID-19 pandemic. Allergists in our country tended to continue inhaled steroids, but systemic steroids were considered risky and their prescription was stopped in asthma patients. General recommendation suggests continuation of allergen immunotherapy in the current COVID-19 pandemic; however, the continuation rate of SCIT has low in Turkey during the COVID-19 pandemic [9]. Similarly, available international guidelines including the current EAACI statement recommend continuing biologicals for the treatment of asthma during COVID-19 and report that there is no current evidence to suggest that biologicals for the treatment of asthma increase the risk of COVID-19 infection; biological therapy was discontinued in one fourth of the asthma patients in our allergy clinics [10]. Internationally recommended adjustments for allergy and immunology practice can be applied to prevent this unnecessary discontinuation of therapeutic procedures including immunotherapy and biologicals (Table 2) [10, 11].

In conclusion, while further work is necessary to improve the standards of allergy and immunology clinics during the COVID-19 pandemic, the survey results suggest that the COVID-19 pandemic is reshaping physicians' usual allergy and clinical immunology care in Turkey. Our study results and learning from the experiences of other countries and specialties may help to optimize allergy practice and compatibility with international guidelines.

### Statement of Ethics

This research was conducted ethically in accordance with the World Medical Association Declaration of Helsinki and the study protocol was approved by the institute's committee on human research (Koc University Ethics Committee, 2020.167.IRB2.057).

### Conflict of Interest Statement

The authors have no conflict of interests to declare.

### Funding Sources

The authors received no funding for this article.

### Author Contributions

S.B. contributed to the design of this work. S.B., A.B.O., B.E.Ş., O.S., E.C., and A.B. drafted and revised this work.

## References

- 1 World Allergy Organization. COVID-19 [Internet]. 2020 [cited 2020 Jun 27]. Available from: <https://www.worldallergy.org/COVID-19>.
- 2 Global Initiative for Asthma. *Global strategy for asthma management and prevention: Revised asthma guidelines 2020* [Internet]. 2020 [cited 2020 Mar 19]. Available from: [https://ginasthma.org/wp-content/uploads/2020/04/GINA-2020-full-report\\_-final-\\_wms.pdf](https://ginasthma.org/wp-content/uploads/2020/04/GINA-2020-full-report_-final-_wms.pdf).
- 3 National Institute for Health and Care Excellence. *COVID-19 rapid guideline: Severe asthma* [Internet]. 2020 [cited 2020 Apr 17]. Available from: <https://www.guidelines.co.uk/covid-19-rapid-guideline-severe-asthma/455275.article>.
- 4 Türkiye Ulusal Alerji ve Klinik İmmünoloji Derneği. *National Society of Allergy and Clinical Immunology (TNSACI)* [Internet]. Available from: <https://www.aid.org.tr/>.
- 5 Bousquet J, Jutel M, Akdis CA, Klimek L, Pfaar O, Nadeau KC, et al. ARIA-EAACI statement on asthma and COVID-19 (June 2, 2020). *Allergy*. 2020. doi: 10.1111/all.14471.
- 6 Gisondi P, Piaserico S, Conti A, Naldi L. Dermatologists and SARS-CoV-2: the impact of the pandemic on daily practice. *J Eur Acad Dermatol Venereol*. 2020 Jun;34(6):1196–201.
- 7 Muddasani S, Housholder A, Fleischer AB. An assessment of United States dermatology practices during the COVID-19 outbreak. *J Dermatolog Treat*. 2020 Aug;31(5):436–8.
- 8 Cai K, He J, Wong PK, Manolios N. The impact of COVID-19 on rheumatology clinical practice and university teaching in Sydney, Australia. *Eur J Rheumatol*. 2020 Aug;7 Suppl 2:S91–3.
- 9 Klimek L, Jutel M, Akdis C, Bousquet J, Akdis M, Bachert C, et al.; ARIA-MASK Study Group. Handling of allergen immunotherapy in the COVID-19 pandemic: an ARIA-EAACI statement. *Allergy*. 2020 Jul;75(7):1546–54.
- 10 Vultaggio A, Agache I, Akdis CA, Akdis M, Bavbek S, Bossios A, et al. Considerations on Biologicals for Patients with allergic disease in times of the COVID-19 pandemic: an EAACI Statement [published online ahead of print, 2020 Jun 5]. *Allergy*. 2020 Jun;all.14407.
- 11 Shaker MS, Oppenheimer J, Grayson M, Stukus D, Hartog N, Hsieh EW, et al. COVID-19: Pandemic Contingency Planning for the Allergy and Immunology Clinic. *J Allergy Clin Immunol Pract*. 2020 May;8(5):1477–1488.e5.