

Letter to the Editor



Management Practice of Allergic Rhinitis in China During the COVID-19 Pandemic

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Severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2), which was provisionally named as “coronavirus disease 2019” (COVID-19) by the International Committee on Taxonomy of Viruses,¹ is a newly identified member of human coronavirus species that has emerged recently and caused a highly infectious disease. COVID-19 has spread aggressively across the globe since it was first reported in December 2019,² and declared as a pandemic by the World Health Organization on March 11. Up to April 7, 2020, 1.33 million and 83,071 cases of COVID-19 have been confirmed worldwide and in China, respectively.

Presently, management of allergic rhinitis (AR) is a growing concern throughout the world, as over 500 million people, including 25 million in China, have AR, and in the event of a global infectious pandemic, access to allergy services is likely to be drastically limited or adjusted. The concern arises particularly due to an overlap of certain upper respiratory symptoms due to AR, influenza, as well as viral infection of the upper respiratory tract during the early stages. In this sense, rhinologists and allergists are responsible for timely diagnosis and treatment of suspected or diagnosed AR patients, in order to reduce the patients' anxiety of suffering from COVID-19 infection and unnecessary medical burden. Moreover, patients receiving allergen immunotherapy (AIT; currently the only curative intervention for AR), particularly subcutaneous immunotherapy (SCIT), need to attend their local allergy centres to complete their treatments successfully. In this regard, 13,800 patients in China are currently receiving SCIT; and among these patients, 87% have reached their maintenance period but not completed their treatment. If such patients were unable to continue the ongoing therapy because of the infectious pandemic, this would undoubtedly result in great disease-related health and financial loss for the patients, as well as financial loss for the local healthcare system. Thus, implementing effective strategies for maximized effective management of AR patients, coupled with prevention of the COVID-19 cross-infection among health care workers (HCWs) as well as patients within allergy centres during the present COVID-19 pandemic, is of vital importance for the medical community.

Beijing, which is outside the center of the epidemic in China, has a total of 588 confirmed COVID-19 cases to date. Three designated hospitals have been opened for the treatment of patients with COVID-19 in Beijing, whereas tasks of the other non-designated comprehensive medical centers, such as Beijing Tongren Hospital for example, mainly involve screening for COVID-19 cases and sustaining emergency and necessary outpatient medical services. A fever clinic which was originated from the battle against SARS in 2003 in China is specifically set

up in our hospital to identify the cause of the fever and distinguish the actual COVID-19 cases from patients with fever and/or respiratory symptoms similar to those found in COVID-19 cases. During the COVID-19 epidemic, the number of outpatient visits to Allergy Clinic of Beijing Tongren Hospital decreased by 90% compared with the same period in the previous year; however, this has now gradually recovered to 50%, *i.e.*, 100 patients per day. All 423 local AR outpatients are receiving immunotherapy continuously, and account for 75% of the total patients undergoing SCIT.

The management of AR includes allergen avoidance, pharmacotherapy, AIT and patient education.³ A panel of allergy/immunology specialists from the US and Canada has recently published an expert panel consensus document, which provides a prioritization rational to help guide decision-making for allergist/immunologist when they need to limit services to their patients during the COVID-19 pandemic.⁴ Based on the experience of Allergy Clinic of Beijing Tongren Hospital, one of the largest and best-known allergy clinics in China, we have developed an algorithm specifically for management of AR (**Figure**) during the COVID-19 pandemic in China. This involves a strict screening protocol to ensure that the patients who are coming to the allergy clinic are not infected by COVID-19; as initially indicated by a body temperature lower than 37.3°C⁵ and a negative epidemiological history, which indicates that the patients had remained in Beijing for over 14 days prior to the hospital visit. Thus, for screening purpose the entrance to the hospital has been arranged with infrared human body temperature screening door that a patient's temperature is measured and a history of their movement over the last 14 days are recorded before the patient can enter the hospital. The epidemiological history is an important part of screening, and a record of the patient's movement within 2 weeks can be obtained by scanning a smartphone at the entrance of the hospital. Only patients with both a normal temperature and a negative epidemiological history are allowed to proceed to the outpatient departments and a second body temperature measurement with contactless forehead temperature grab will be performed before entering each targeted department; whereas patients with a body temperature higher than 37.3°C are guided to the fever clinic to have additional screening examinations; including routine blood tests and chest computed tomography scanning. Throat swabs are also taken for SARS-CoV-2 RNA testing if necessary to separate patients with fever and/or respiratory symptoms including cough, runny nose, sore throat along with nasal congestion and sneezing, similar to those found in COVID-19. When a patient's viral nucleic acid test result is found to be positive, the patient is transferred to one of the COVID-19 designated hospitals for further treatment.

There is presently inconclusive evidence on the safe use of corticosteroids in asthmatic patients affected by COVID-19. However, in the case of AR patients infected with COVID-19, the ARIA-MASK study group and the European Academy of Allergy and Clinical Immunology have recently developed an expert consensus statement, which recommends that use of intranasal corticosteroids (INS) in AR should be continued at the recommended dose, as stopping the INS would increase sneezing and lead to more spreading of the virus.⁶ In regard to the influence of continuous use of INS in AR patients infected with COVID-19 on the disease of COVID-19 as well as immune defenses and health outcomes of affected patients, there is a paucity of real-world experience and thus the recommendation for INS should be adjusted accordingly based on the new data confirmed. In view of the fact that droplets caused by respiratory symptoms such as sneezing and coughing, and tears caused by conjunctivitis⁷ may be an important source of viral transmission, the protection of HCWs is particularly important, when close inspection or contact with allergic patients is necessary, for example when administering AIT injections. Besides taking the standardized basic

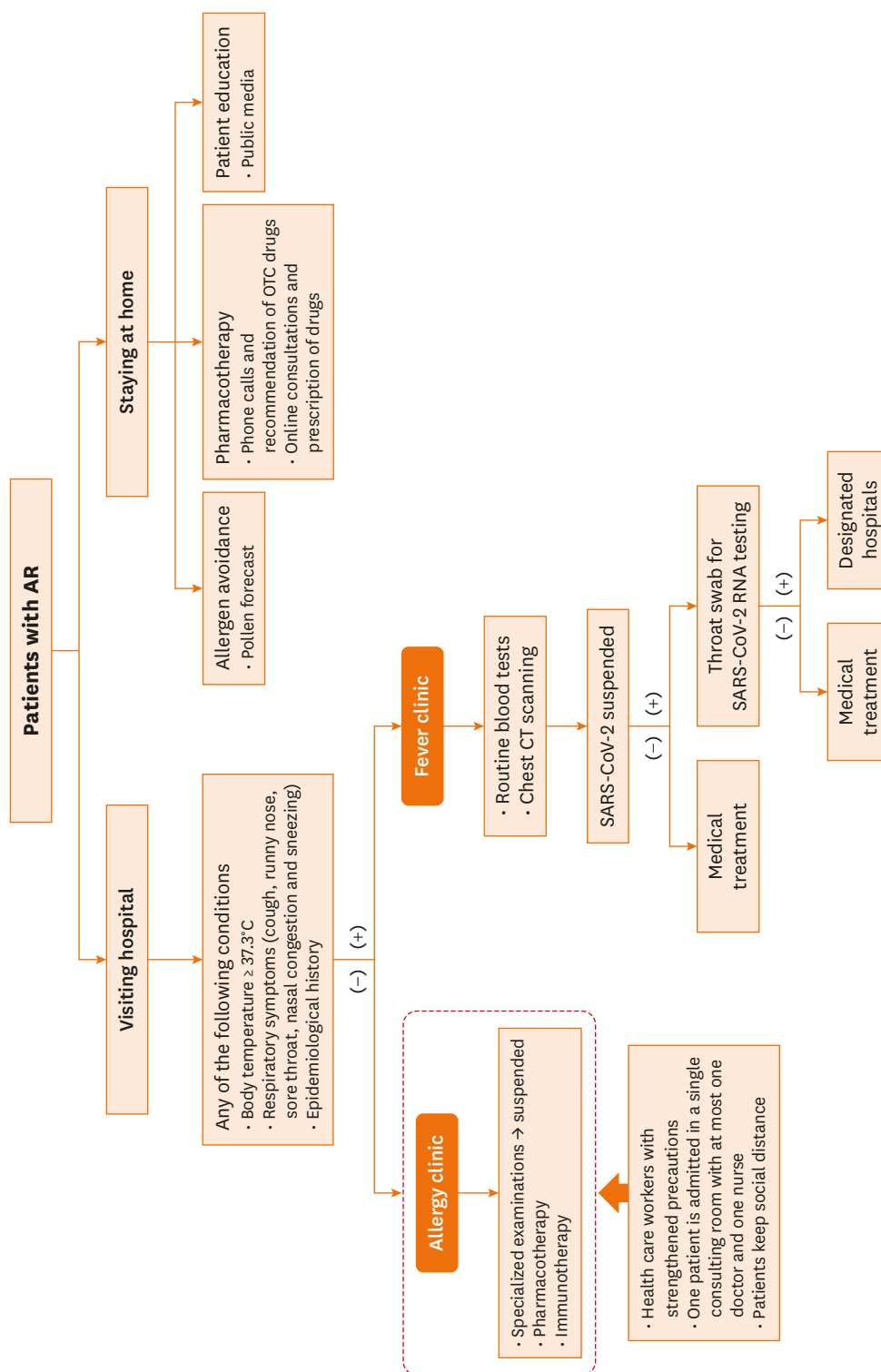


Figure. The AR management algorithm based on the practice experience of Allergy Clinic of Beijing Tongren Hospital during COVID-19 pandemic. AR, allergic rhinitis; OTC, over-the-counter; SARS-CoV-2, severe acute respiratory syndrome coronavirus 2; CT, computed tomography; COVID-19, coronavirus disease 2019.

precautions; including wearing work clothes, disposable surgical masks and waterproof medical caps; all HCWs in allergy clinics take extra precautions by wearing anti-fog protective goggles and protective face shields. During an outpatient visit, the patient is admitted to a single consulting room with good ventilation, and at most one doctor and one nurse in attendance in the room at the same time. Patients are required to observe social distancing regulations with other patients when waiting for their consultation with the doctor or when under observation following the immunotherapy injection. During this consultation, all specialized examinations such as anterior rhinoscopy, endoscopy, rhinomanometry and acoustic rhinometry, pulmonary function and serum allergen tests are suspended. Apart from the outpatient visit, the patient can obtain knowledge of prevention and control of AR via the general public media platform.

Currently, 564 patients are receiving SCIT in our clinic before COVID-19 epidemic; of whom 75% of these patients are long-term residents in Beijing and undergoing continuous SCIT following the screening process during the COVID-19 epidemic. The remaining 25% of the patients, who live outside Beijing, have each been contacted by telephone and been advised that in order to reduce the risk of infection in the process of transportation, their treatment should be suspended until the end of the epidemic. Fortunately, to date all the local patients have successfully been treated by AIT, with no case of infection with COVID-19 being recorded among these patients. Based on this experience, it is clear that there needs to be a high level of cooperation between doctors, nurses, technicians and the patients, for a successful outcome.

At present, as Beijing enters the peak of the spring pollen season, Beijing Tongren Hospital is cooperating with the China Meteorological Administration (http://www.weather.com.cn/forecast/hf_index.shtml?id=101010100&from=singlemessage&isappinstalled=0) and Beijing Meteorological Bureau (<http://bjweather.iyuebo.com/weather.php?a=chart2>) to establish a pollen monitoring network for to predict pollen counts, providing useful information towards the patients with pollen allergy. This service is being popularized via the internet and mobile App technology (WeChat), and also provides medical services such as online consultations and delivery of medications to patients. Moreover, the specialists will also increase TV media publicity (<https://item.btime.com/f2ig2sk409q9m5pasnv85tns89e>) and provide more online lectures on diseases using Zoom or Tencent real time conferencing software during the outbreak. The doctors will also recommend to the patients the over-the-counter drugs, which can be bought from their local pharmacies, to control their allergic symptoms.

We suggest that the experience and lessons learned from allergy clinics in various countries during the current COVID-19 pandemic need to be summarized and shared in time, in the hope that this will help in the provision of better services and management of patients suffering from allergic diseases during this pandemic.

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