

Anaphylaxis induced by inhaling guinea pig allergen

Rui Tang, Hong Li

Department of Allergy, Peking Union Medical College Hospital, Peking Union Medical College, Chinese Academy of Medical Sciences, Beijing Key Laboratory of Precision Medicine for Diagnosis and Treatment on Allergic Diseases, Beijing 100730, China.

To the Editor: A 27-year-old man was admitted to the Peking Union Medical College Hospital for wheezing, accompanied by coughing; white phlegm; dyspnea; sneezing; a runny, stuffy, and itchy nose; red itchy eyes; wheals on both arms; abdominal pain and dizziness. His symptoms started 10 min after he bathed and dried his guinea pig. Cetirizine and steroids partially alleviated the symptoms that day and completely alleviated them by the next morning. The patient's history included allergic rhinitis and eczema, and he had no food or drug allergies. His father was allergic to cheese and eggs. He had kept a cat for 20 years, a dog for 5 years, and a guinea pig for 2 years. Physical examination on admission revealed maculopapules, scratches, and scabs scattered around both legs, his nasal mucosa was pale and edematous, and his lung breath sounds were clear. He was diagnosed with anaphylaxis, allergic rhinitis, and eczema. Allergen testing was performed. The skin test was positive for dust mites (++) , dust (+), and cats (++) . His total IgE was 200 kU/L. Serum-specific IgE (sIgE) results showed the following: Phadiatop, 11.4 pharmacaria arbitrary unit/L (grade 3); guinea pig (e6), 22.7 kU allergen (A)/L (grade 4); *Dermatophagoides pteronyssinus* (d1), 10.6 kU(A)/L (grade 3); *Dermatophagoides farinae* (d2), 11.4 kU(A)/L (grade 3); hx2 (h2, d1, d2, i6), 12.7 kU(A)/L (grade 3); and cat dander (e1), 0.89 kU(A)/L (grade 2). The sIgE values for hamster (e84), rat (e87), mouse (e88), dog dander (e5), *Aspergillus fumigatus* (m3), and *Alternaria alternata* (m6) were all <0.35 kU(A)/L (ImmunoCAP, Thermo Fisher Scientific, San Jose, CA, USA). Lung function tests were forced expiratory volume in 1 s (FEV1), 88%; FEV1/forced volume vital capacity, 114%; and fraction of exhaled nitric oxide, 98 ppb.

Anaphylaxis is an acute, potentially life-threatening, and systematic allergic reaction, with an incidence of 1.6% to 5.1%.^[1] Clinical manifestations can involve skin, respiratory, cardiovascular, and digestive systems. This patient had cutaneous, respiratory, and gastrointestinal

symptoms; thus, anaphylaxis was diagnosed according to diagnostic criteria.^[1] The patient had kept a guinea pig for 2 years, which induced sensitization. His symptoms started after close contact with the guinea pig but with not cats or dogs. Without consuming special foods or drugs, the dust mite and dust concentrations decreased to fairly low levels, while the guinea pig allergen concentration simultaneously increased dramatically and promptly after bathing, then dried up within several minutes. Allergen testing showed that the guinea pig allergy was grade 4, confirming guinea pig-induced anaphylaxis. Allergen challenge testing was avoided to prevent inducing anaphylaxis, and a definitive diagnosis was made from the contact history, clinical features, and allergen test results. The most common causes of anaphylaxis are food in outpatients^[2] and medicine in inpatients.^[3] Until now, no cases of anaphylaxis induced by inhaling guinea pig allergens have been reported in China. Atopic diseases, such as eczema and allergic rhinitis, may be risk factors for anaphylaxis in this patient.^[1,4] The pet-owning population continues to increase, and pet species are varied. Anaphylaxis can cause a fatal reaction even acute myocardial infarction^[5] if not promptly diagnosed and treated. This case suggests that inhaled allergens may be one cause of recurrent anaphylaxis.

Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form, the patient has given his consent for his images and other clinical information to be reported in the journal. The patient understands that his name and initials will not be published and due efforts will be made to conceal his identity, but anonymity cannot be guaranteed.

Conflicts of interest

None.

Access this article online

Quick Response Code:



Website:
www.cmj.org

DOI:
10.1097/CM9.0000000000000971

Correspondence to: Dr. Hong Li, Department of Allergy, Peking Union Medical College Hospital, Peking Union Medical College, Chinese Academy of Medical Sciences, Beijing Key Laboratory of Precision Medicine for Diagnosis and Treatment on Allergic Diseases, Beijing 100730, China
E-Mail: lihong1228sec@163.com

Copyright © 2020 The Chinese Medical Association, produced by Wolters Kluwer, Inc. under the CC-BY-NC-ND license. This is an open access article distributed under the terms of the Creative Commons Attribution-Non Commercial-No Derivatives License 4.0 (CCBY-NC-ND), where it is permissible to download and share the work provided it is properly cited. The work cannot be changed in any way or used commercially without permission from the journal.

Chinese Medical Journal 2021;134(2)

Received: 10-03-2020 Edited by: Li-Shao Guo

References

1. Shaker MS, Wallace DV, Golden DBK, Oppenheimer J, Bernstein JA, Campbell RL, *et al.* Anaphylaxis—a 2020 practice parameter update, systematic review, and grading of recommendations, assessment, development and evaluation (GRADE) analysis. *J Allergy Clin Immunol* 2020;145:1082–1123. doi: 10.1016/j.jaci.2020.01.017.
2. Jiang NN, Yin J, Wen LP, Li H. Characteristics of anaphylaxis in 907 Chinese patients referred to a tertiary allergy center: a retrospective study of 1,952 episodes. *Allergy Asthma Immunol Res* 2016;8:353–361. doi: 10.4168/aair.2016.8.4.353.
3. Tang R, Xu HY, Cao J, Chen S, Sun JL, Hu H, *et al.* Clinical characteristic of inpatients with anaphylaxis in China. *Biomed Res Int* 2015;2015:429534. doi: 10.1155/2015/429534.
4. Wang ZX, Han W, Li H, Yin J. Etiology and characteristic of food induced anaphylaxis in outpatient (in Chinese). *Chin J Allergy Clin Immunol* 2016;10:191–196. doi: 10.3969/j.issn.1673-8705.2016.03.002.
5. Tang R, Sun JL. Acute myocardial infarction induced by anaphylaxis. *Chin Med J* 2018;131:1251–1252. doi: 10.4103/0366-6999.231518.

How to cite this article: Tang R, Li H. Anaphylaxis induced by inhaling guinea pig allergen. *Chin Med J* 2021;134:239–240. doi: 10.1097/CM9.0000000000000971