

Occupational Asthma and Rhinoconjunctivitis due to Soybean in a Bakery Worker

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To the Editor:

I read the article titled “Occupational Asthma and Food Allergy due to Soybean in a Bakery Worker” by Narváez-Fernández et al [1] with great interest. Conflicting issues regarding the diagnosis of this patient and the methods of diagnosis have been brought to my attention. I have written this letter because I believe it would be in the reader's interest to have them explained.

First, class 3 food allergy is defined in the key messages of the European Academy of Allergy and Clinical Immunology (EAACI) position statement as follows: “Food processing activities produce dust particulate or aerosols that are readily inhaled and can act as primary sensitizers in the airways, causing a distinct form of respiratory food allergy, usually without any symptoms upon ingestion” [2]. Moreover, although class 3 food allergy usually involves respiratory complaints, the patient discussed had mainly gastrointestinal complaints and was even on a diet [1].

The use of the words “occupational asthma and food allergy” in the title is inadequate [1], since the patient developed rhinoconjunctivitis with asthma owing to workplace exposure.

Second, diagnostic methods and the differential diagnosis of this disease, including occupational eosinophilic bronchitis and potroom asthma, could have been better explained in the case report [3].

Considering the results of the diagnostic tests, skin prick test, and specific IgE determination, there is no conclusive evidence that very likely triggers other than soybean do not cause asthma or rhinoconjunctivitis in this patient, or that these symptoms are due to soybean alone. Both tests were positive for wheat and barley in addition to soybean. Interestingly, the allergen microarray assay (ISAC) was not positive for these allergens [1], leading us to ask how the authors proved that this patient's condition was not due to wheat [4]. Therefore, the patient's complaints cannot be attributed to soybean in absolute terms.

How was baseline spirometry found to be normal in this patient with severe and persistent asthma? And how much significance does a positive bronchodilator test have in normal spirometry? The inability to perform a specific bronchial

challenge with culprit allergens prevents confirmation of the diagnosis of occupational asthma [1].

Third, in guidelines, the diagnosis of occupational asthma is based on a questionnaire and unbiased evaluation of the relationship between work exposure and onset of asthma [1-9]. Independent diagnosis of asthma requires evidence of reversible airway obstruction or augmented nonspecific bronchial hyperresponsiveness. Although nonspecific bronchial hyperresponsiveness was demonstrated in this patient, baseline spirometry did not reveal obstruction [1], and while not easy to perform, specific inhalation tests are also considered the reference standard for confirming the diagnosis of occupational asthma [5]. Examples of bronchial response patterns should be demonstrated following these specific inhalation challenges. Among the bronchial responses observed after inhalation challenges in the laboratory or at the workplace, early responses are the most frequent, followed by dual asthmatic responses with a few isolated late reactions [5]. In this patient, unfortunately, such responses could not be demonstrated with the culprit soybean allergens.

Fourth, this case is probably not the first case, because soybean/soybean-associated occupational asthma is mentioned in the EAACI guidelines and elsewhere [2,5-7]. It is even mentioned in the articles and guidelines of Bush in 1977 and Lavaud in 1994 [2]. Again, the relationship between food processing and occupational respiratory allergy and soybean/soybean-associated allergy is mentioned in Table 1 and Table 7 of the EAACI position paper. Soybeans are listed in Table 1 as a food causing occupational allergy and asthma. Table 7 shows that soybean under noncereal flours is one of the allergens associated with occupational allergy and asthma in food processing work environments. Dairy companies, bakeries, and animal food preparation are shown as sources of occupational exposure [2].

In conclusion, I would like to thank the authors for this elegant and high-quality article and its results, which increase our knowledge and awareness of the relationship between occupational asthma and soy.

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Conflicts of Interest

The author declares that he has no conflicts of interest.

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