

ALEX²® Case Study No. 7

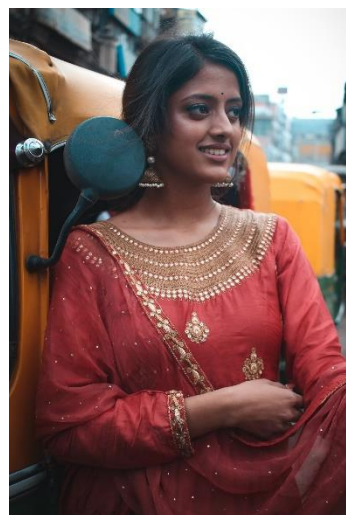
Mala, 22 years, from Chennai (India)

Clinical history

None

Family history

No known allergy in her parents or siblings.



Present situation (2021)

Mala is 22 years old woman studying and living in Chennai, India. She loves Indian cuisine and has been living vegan for a year. After eating a nut mixture, she experiences slight discomfort in her mouth, which manifests as tingling and itching. Her family doctor then prescribes her antihistamines, and the symptoms improve. She tries to avoid nuts as much as possible.

A few weeks later, Mala eats a typical Indian curry dish, deliberately without nuts but with soy milk and tofu. While eating, she feels dizzy, nauseous, and has to vomit. At first, she suspects that there were traces of nuts in the dish. Her friends take her to hospital because she also has difficulty breathing and a skin rash appears. The suspicion - anaphylaxis due to a nut allergy. An extensive blood test using the ALEX²® multiplex test is ordered.

ALEX²® Results*

Allergen Source	Allergen	Biochemical Designation	IgE Level [kU _A /L]
	tlgE		309.82
Peanut	Ara h 1	7/8S Globulin	54.95
Peanut	Ara h 2	2S Albumin	51.02
Peanut	Ara h 3	11S Globulin	30.54
Peanut	Ara h 6	2S Albumin	45.52
Soy	Gly m 5	7/8S Globulin	42.80
Soy	Gly m 6	11S Globulin	48.86
Soy	Gly m 8	2S Globulin	5.81

* For convenience extract results are not shown, if a corresponding component was positive.

Interpretation

- Sensitisation to peanut and soybean was observed. The allergic symptoms associated with peanut as well as soy range from oral allergy syndrome to severe anaphylactic reactions - including anaphylactic shock.
- Peanut storage proteins Ara h 1, 2, 3, and 6 are associated with clinical reactions up to severe anaphylaxis. The degree of cross-reactivity between storage proteins from peanuts and storage proteins from legumes, nuts, and seeds is low to moderate. Storage proteins are stable to heat and digestion.

- Gly m 5, 6 & 8 are storage proteins associated with clinical reactions up to severe anaphylaxis. The degree of cross-reactivity between storage proteins from soy and storage proteins from legumes, nuts, and seeds is low to moderate. Gly m 5, 6 & 8 are stable to heat and digestion. Fermented soy products (e.g., soy sauce, miso) have lost their allergenicity.

Summary

A serological work-up using ALEX²® was ordered and the results showed that the peanut risk components (Ara h 1, Ara h 2, Ara h 3, Ara h 6) were positive, which hardened the suspicion of peanut allergy.

Surprisingly, however, the soy allergens Gly m 5, Gly m 6 and Gly m 8 were also positive. Gly m 5/6 are also risk markers that can cross-react with Ara h 1/3.

Mala had regularly consumed soy products in the form of soy milk and tofu over a long period of time due to her vegan lifestyle. This remained hidden as a clinically silent sensitisation until a peanut allergy also affected the soy allergy. This was a co-sensitisation to peanut as well as soy.

To prevent anaphylactic shock, the patient must avoid nuts and soy products from now on and is provided with an emergency kit consisting of an adrenaline autoinjector, a corticosteroid, and an antihistamine.