

Anaphylaxis following psyllium ingestion

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Psyllium is a hydrophilic agent found in many bulk laxative preparations. We report the occurrence of an anaphylactic reaction in a patient after ingestion of a psyllium-containing laxative. IgE mediation of the reaction was suggested by a positive immediate skin test to psyllium, positive passive transfer skin test, lack of skin response during passive transfer with heat treated serum, and an elevated IgE (RAST) to psyllium seed. (J ALLERGY CLIN IMMUNOL 74:79, 1984.)

Psyllium is a hydrophilic agent capable of retaining intestinal fluids. It is found in bulk laxatives and used by millions of people daily to relieve symptoms of constipation and irritable bowel syndrome. Nasal congestion, rhinorrhea, sneezing, and asthma have been reported in workers involved in the manufacture^{1, 2} and dispensing^{3, 4} of psyllium-containing laxatives. The following case report is of a patient who developed a life threatening anaphylactic reaction to a psyllium-containing laxative.

CASE REPORT

A 37-year-old, previously healthy, white woman presented to the emergency room after the acute onset of respiratory distress, generalized urticaria, and facial and tongue swelling. These symptoms began 15 min after ingestion of two tablespoons of a psyllium-containing laxative (Natural Vegetable Laxative, Giant Foods, Landover, Md.). She had never ingested a psyllium-containing laxative previously. The patient works as a nurse in a nursing home and had noticed episodic sneezing, itching of the eyes, and wheezing during the previous 3 yr when she was mixing and dispensing psyllium laxative (Metamucil; Searle Laboratories, Chicago, Ill.). She denied a previous history of allergy. In the emergency room she was noted to be anxious, tachypneic, and using accessory muscles of respiration. Physical examination was remarkable for generalized ur-

TABLE I. Skin test results

Test	Wheal (mm)	Flare (mm)
Histamine control (ID)	10 × 12*	40 × 50
Saline control (ID)	4 × 2	—
Natural Vegetable Laxative (1:100 dilution; prick)	20 × 25*	50 × 60
Psyllium seed (1:100,000 dilution; prick)	10 × 10*	35 × 37
Benzyl benzoate (ID) (preservative)	2 × 3	—
Passive transfer (by use of psyllium 1:10,000 dilution; ID)		
Histamine control	10 × 10*	40 × 30
Saline control	2 × 2	—
Untreated site	2 × 1	—
Unheated serum site	15 × 10*	40 × 30
Heated serum site	2 × 1.5	—

ID = Intradermal.

*Pseudopods present.

ticaria, facial and tongue swelling, and diffuse bilateral wheezing. Blood pressure was stable at 120/60 mm Hg. The patient was treated with subcutaneous epinephrine, intravenous diphenhydramine, intravenous dexamethasone, and inhaled isoetharine. Respiratory symptoms and pruritus improved. She was maintained on diphenhydramine hydrochloride (50 mg every 6 hr) and observed overnight. Urticaria resolved, and the patient was discharged.

Direct skin testing, 1 wk later, with Natural Vegetable Laxative and psyllium seed were positive (Table I). Extract from the Natural Vegetable Laxative and psyllium seed were prepared by suspending 1 gm in 100 ml of normal saline. Serial dilutions of these extracts were prepared and sterilized by membrane filtration. Three control patients were negative to skin testing with psyllium seed.

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Serum from the patient was obtained for passive transfer skin testing (Prausnitz-Küstner reaction),⁵ and an aliquot was heated at 56° C for 1 hr. Heated and unheated serum (0.05 ml) was injected intradermally into skin sites of the patient's daughter. After 24 hr, skin sites (e.g., untreated site, unheated serum site, heated serum site) were challenged with 0.02 ml of psyllium-seed extract (Table I). The passive transfer recipient was negative to skin testing with psyllium at the untreated and heat-treated serum sites. Challenge at the unheated serum site was strongly positive.

Total IgE (Dexall Labs, Division of T & M Immuno Diagnostic Labs, Inc., Gaithersburg, Md.) in the patient was 150 IU/ml (PRIST). Specific IgE to psyllium seed (RAST) was 2.6 Phadebas RAST units in the patient and less than 0.14 RAST units in control serum.

The patient subsequently avoided contact with psyllium-containing preparations and has had resolution of her respiratory symptoms.

DISCUSSION

Anaphylaxis, positive immediate skin test to psyllium, positive passive transfer skin test, lack of response during passive transfer with heat-treated serum, and elevated IgE to psyllium seed suggest IgE-mediated hypersensitivity to psyllium seed. Rosenberg et al.² have demonstrated IgE to psyllium in a patient with occupational (e. g., employed in the production of psyllium laxative) asthma. The history, in this case, suggests that the patient was sensitized to psyllium via the inhalational route while the patient was mixing and dispensing it at the nursing home where she worked. Previous cases¹⁻⁴ of respiratory hypersensitivity reactions (e. g., asthma, rhinitis,

sneezing) to psyllium have been reported. Psyllium is hydrophilic and primarily confined to the gastrointestinal tract. Although our patient's anaphylactic reaction may well have been precipitated by respiratory tract absorption of aerosolized psyllium antigen, we favor gastrointestinal absorption of antigen as the precipitating event. The patient routinely mixed and dispensed psyllium laxative at work but never had anaphylaxis previously. Busse and Schoenwetter¹ also demonstrated that ingested psyllium could induce palatine itching, sneezing, and rhinorrhea in three patients with histories of psyllium-induced asthma.

Psyllium powder in laxatives is finely ground and easily aerosolized. Millions of patients daily are exposed to the product. It is unknown whether or not psyllium represents a significant cause of allergic symptoms. However, hypersensitivity to psyllium should be considered in those patients with the appropriate symptoms who use psyllium products.

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