

Sensitization to pig albumin and γ -globulin responsible for occupational respiratory allergy

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Key words: albumin; γ -globulin; occupational asthma; pork-cat syndrome.

Occupational allergies to meat have been observed as cases of contact dermatitis, but very few reports have shown occupational respiratory reactions to meat (1). One major allergen in meat is serum albumin, a nonglycosylated 65 kDa protein.

Serum albumins from many species have been reported to be aeroallergens and to cause respiratory cross-sensitization to the corresponding species (2, 3). They are also known to be food allergens. γ -Globulin in meat has been confirmed to be another food allergen in 10 patients allergic to beef (4). Here we report the case of a woman working in the meat industry who developed urticaria, rhinitis and asthma from contact with natural pig gut (intestines) and a food allergy to pork due to a sensitization to pig albumin and γ -globulin.

This 39-year-old woman, employed in the pork processing industry, recounted the occurrence of facial edema and urticaria of the hand within a few minutes of beginning to operate a sausage stuffing machine to which she continually adjusts the natural pork gut casing. She described urticaria, rhinitis and asthma when she ran the machine

Occupational asthma due to inhalation of aerosolized albumin, γ -globulin and a 26-kDa protein from evaporated pig-gut soaking water.

and a few hours after contact with aerosols from evaporated soaking water used to hydrate the pig gut. One year after these first symptoms, she had asthma attacks after ingestion of cooked pork meat and black pudding. She was also sensitized to cat allergen and had a cat at home.

Skin prick tests (SPT) (Stallergenes and Allerbio Labs, Morangis and Varennes, France) to common inhalant allergens were positive to cat and dog and negative to commercial food allergen extracts. They were positive to pig-gut soaking water obtained directly from the factory. Specific IgE tests (CAP Pharmacia, Sweden) for cat, pig, cow, and dog serum albumin were positive, as well as for dander from cows, dogs, and horses. To confirm the role of the gut soaking water in the respiratory symptoms, a bronchial challenge test was performed with it. Inhalation of nebulized pure soaking water induced an immediate positive response with a 23% drop in FEV1.

Immunoblot testing used pig, sheep, and cow meat as well as pig-gut soaking

water extracts provided by the butcher industry. The patient strongly reacted to albumin, purified from pigs (Sigma-Aldrich Lab, Saint Quentin, France) and from extract (MW 66 kDa), and γ -globulin (MW 152 kDa), purified from pigs and cats (Sigma-Aldrich Lab, Saint Quentin, France) and from extract, although the extract contained less γ -globulin than albumin.

Immunoblot-inhibition assays were performed with pork meat and pig-gut soaking water and, as inhibitors, albumin from pigs and γ -globulin from cats and pigs. The albumin inhibited approximately 100% of the albumin-IgE binding to both meat and water. γ -globulin from pigs and cats inhibited the γ -globulin-IgE binding in pork meat and soaking water. Neither γ -globulin from cats and pigs nor albumin from pigs could inhibit a band of approximately 26 kDa in the soaking water (Fig. 1).

Our results suggest that the patient had a pork-cat syndrome but was also sensitized to several species of animal dander and mammalian serum albumin.

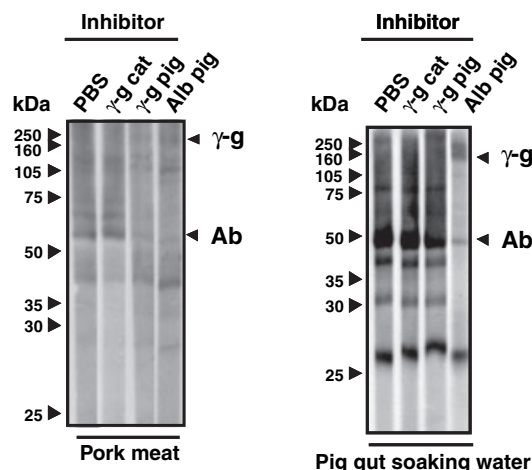


Figure 1. Blot inhibition assay of pork meat and pig-gut soaking water with cat (γ -g cat) and pig (γ -g pig) γ -globulin and pig albumin (Alb pig).

Drouet and coll (5) described a pork-cat syndrome or crossed allergy between pork meat and cat epithelia in 1994. The pattern shown by our patient differed slightly from previous reports. First, she had no asthma attacks due to cats. Secondly, she developed urticaria, rhinitis and asthma when exposed at work to aerosols from evaporated pig-gut soaking water containing albumin, γ -globulin and a 26 kDa protein. Albumin has been reported to be allergens for food allergies to pig gut and γ -globulin for allergy to beef, but none have ever been reported to be aeroallergens. In conclusion we demonstrated that our patient had occupational asthma due to inhalation of pig albumin, γ -globulin and a 26-kDa protein contained in evaporated pig-gut soaking water.

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Multiple drug intolerance including etoricoxib

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Key words: adverse reactions; drug allergy; etoricoxib; niflumic acid; NSAIDs.

Acetylsalicylic acid (ASA) and other nonsteroidal anti-inflammatory drugs (NSAIDs) are among the drugs that most commonly cause adverse reactions, and in asthmatics these reactions can occur from 4.3 to 10.9% (1, 2). In these patients, cyclooxygenase-2 (COX-2) inhibitors, when indicated, have been proposed as a therapeutic alternative although, even with very recently marketed drugs, such as rofecoxib, positive challenge was observed in about one-third of the patients with previous NSAID hypersensitivity reactions (3); nevertheless, better results were reported by other authors (4). Severe selective allergic reactions to COX-2 inhibitors have also been described (5).

Etoricoxib is a recently introduced member of the COX-2 very selective inhibitors class of NSAIDs. It is available in tablets of 60, 90 and 120 mg and recommended for osteoarthritis and chronic low back pain, rheumatoid arthritis and for acute gouty arthritis and primary dysmenorrhoea (6–7).

There are no previous reports in the literature, to our knowledge, of adverse reactions to etoricoxib.

The authors report a case of a 38-year-old female, with a previous history of

adverse reaction to different NSAIDs, who required an elective arthroscopy to her left knee and had no alternative drug for post-surgery pain relieve. The patient also has asthma and rhinitis and a family history of anaphylaxis to a general anaesthetic.

Our patient had a previous diagnostic of ASA sensitivity evidenced by several episodes of upper airway obstruction in the sequence of ASA ingestion. These episodes required treatment with intravenous corticosteroids for their resolution.

At the age of 23, attempts have been made to introduce nimesulid and acetaminophen with poor results. The patient developed dry cough, nausea and indisposition, which were controlled with H₁-antihistamines.

Three years ago the patient had an episode of upper airway obstruction, face and hand oedema and generalized pruritus following administration of intramuscular diclofenac.

Since then she has been avoiding all NSAIDs.

About 7 months ago she developed generalized urticaria and face angio-oedema in the sequence of the ingestion of 12.5 mg of rofecoxib, prescribed for pain relief after her first arthroscopy to the left knee. This reaction was also controlled with H₁-antihistamines. At present she needs a second arthroscopy and has no available medication for pain relief.

The patient was referred to our department where we decided to perform a single-blinded placebo-controlled challenge with 60 mg of etoricoxib. We started with the administration of placebo followed by 20 and 40 mg of etoricoxib, at 30-min intervals.

About 1½ h after the beginning of the challenge, the patient started to feel nauseated, trembling and referred abdominal pain and headache. The symptoms remitted after treatment with 20 mg of ebastine by mouth.

Another single-blinded placebo challenge was tried with 50 mg of tramadol 1 week later and the patient developed nausea and strong eructation and subsequently vomiting, symptoms that remitted shortly after the administration of 20 mg of ebastine. As the patient had an arthroscopy scheduled for the following day, we

A case of a placebo-controlled positive challenge to etoricoxib with tolerance to niflumic acid