Food allergy

Amena Warner discusses the diagnosis and management of this substantial burden to healthcare systems and society and considers pharmacists’ role

DURING THE PAST 60–70 years the frequency of atopic disease, such as asthma, eczema and allergic rhinitis, has increased in many western countries, including the UK. Atopy is a risk factor to developing allergy. The allergic march (the progression of eczema and possibly food allergy as a baby, followed by asthma as a child, and hay fever as a teenager) starts as a baby or later, then can persist or be intermittent throughout life. The symptoms can vary and can affect more than one organ, such as the skin and lungs. Allergy is classified as a long term health condition (LTC).

We know there is often familial history and that mutations in the FLG gene (flaggin, which codes for the skin barrier protein) result in an impaired skin barrier, which is thought to allow allergens to penetrate the skin leading to sensitisation and predisposing the body to an allergic response. Severe eczema of infancy has been linked to food allergy. A recent study showed one in five children with a peanut allergy had this FLG mutation so it is very important that the skin barrier is kept well moisturised to prevent it becoming dry and scaly, contributing to an ‘itch, scratch cycle’. The pharmacist needs to make sure the parent or patient knows exactly how and when to apply topical preparations when dispensing, or if OTC advice is sought.

Allergy should only be diagnosed after a full allergy history has been taken, followed by diagnostic tests (skin prick test, specific IgE), or in the case of intolerance, elimination of the suspected allergen, followed by gradual, documented reintroduction. However, if any symptoms have caused severe reactions then this should be done under medical supervision. It is always advisable to keep a food symptom diary (there is one available to download from the Allergy UK website, www.allergyuk.org) so that it becomes easier to see which foods give symptoms.

A healthcare burden

Food allergy has also steadily been increasing in prevalence over the last 10–20 years and is now considered to be a substantial burden to healthcare systems and society.5 Children with food allergy or moderate skin or respiratory allergy have reduced quality of life and the effects on the family are significant. Food allergy is now one of the most common allergic disorders of the paediatric population. It has been linked to anxiety about eating, fear of adverse reactions and impaired quality of life.2

Hospitalisations for anaphylaxis increased seven-fold between 1992 and 2012 in the UK, although fatal anaphylaxis over the same period remained steady.4 We also now have a UK fatal registry.6 It has been suggested that better recognition and management of severe allergic reactions may have contributed to an increase in hospitalisation, but not progressing to fatality due to prompt administration of adrenaline, antihistamine and other medication potentially required (oxygen, hydrocortisone, IV fluids, etc). Prescriptions for adrenaline auto-injectors (AAIs) have also increased over that time. Allergic reactions from food constituted the highest number of these admissions and food induced anaphylaxis was more common in younger people.1 Adverse reactions to foods are often called many different names, including food hypersensitivity, food intolerance, food allergy, IgE mediated food allergy and non-IgE mediated food allergy. These names add to the confusion of diagnosis and managing food-related problems.

Allergy classification

True food allergy is an adverse reaction to a certain food triggered by an immunological mechanism, involving a plasma protein called immunoglobulin E (IgE) in some cases, but not in others. So food allergy has been classified into IgE mediated or non-IgE mediated reactions, or a mixture of both. There is also some thinking that there should also be a new category called NOT IgE mediated reactions. Non-IgE mediated reactions are often cell mediated and both IgE and non-IgE food allergy can come under the general umbrella of food hypersensitivity. It is important to note that IgE mediated reactions are acute and symptoms develop rapidly after allergen exposure, usually within 30–60 minutes. With IgE mediated food allergy, there may be tingling or itching of the mouth or throat, lip swelling, nausea, vomiting, an itchy rash and urticaria. Antihistamine given promptly can often alleviate these symptoms, but if the symptoms affect the respiratory or cardiovascular systems, the reaction is classified as anaphylaxis and immediate treatment with intramuscular adrenaline is required.

It is also important to note that if a person has collapsed due to an anaphylactic reaction, the best position to put them in after adrenaline has been administered (and they are no longer unconscious, their airway is clear and they are breathing) is laid flat with the legs raised. Do not attempt to get them up until their cardiopulmonary state has been assessed. Confirmed food allergy is a risk factor for asthma-related death; and vice versa, especially if the asthma is not well controlled. Asthma is a common and potentially serious chronic disease, characterised by chronic airway inflammation. It causes respiratory symptoms, limitation of activity and flare-ups (attacks) that sometimes require urgent medical healthcare intervention and may be fatal.1

Pharmacists’ role

Pharmacists can play an important role in making sure that the patient knows when and how to use any inhalers, nasal steroid sprays, adrenaline auto-injectors and medication. It is good practice to ensure that a patient knows exactly how to use devices such as adrenaline auto-injectors before they are given one to take home. With good symptomatic control and allergen avoidance, serious allergic reactions may be avoided.

Unfortunately allergen avoidance sounds easier in theory than it is in reality, as some allergens may be masked in food and cross contamination can occur. The new EU food labelling regulations, which came into force in December 2014, will attempt to address some of these issues, with all schools, hospitals, restaurants and food outlets having to comply with this new legislation for the labelling of 14 of the most prevalent and problematic allergens, in terms of the severity of the reactions they can cause. Food allergy reactions commonly occur outside of the home.4 Of all the types of food allergy, cows’ milk allergy (CMA) is the most common in infants and children in the UK, affecting between 2 and 7.5 per cent of infants. The symptoms of CMA can be variable in type and severity, making it difficult to diagnose.11 It is an immune reaction to one or more cows’ milk proteins and the symptoms can be immediate or delayed. New milk allergy in primary care (MAP) guidelines are available to guide professionals through the different symptoms, their recognition and treatment.12 IgE mediated symptoms tend to occur soon after consuming cows’ milk protein, typically affecting the gastrointestinal, respiratory and skin systems. Prompt treatment is required when anaphylaxis has been displayed. If an adrenaline auto-injector has been used in the community, the patient still requires immediate assessment via A&E and monitoring of secondary reactions once the adrenaline’s effects have worn off. Treatment is the avoidance of cows’ milk and when a mother is breastfeeding she should eliminate all milk.
protein from her diet (the help of a dietitian is recommended). For bottle-fed babies with mild to moderate CMA, a prescribed extensively hydrolysed formula (eHF) is recommended. If the CMA is severe, complex, or the baby has not responded to the above eHF, then an amino acid formula is recommended. There are currently six extensively hydrolysed formulas available and ideally children with CMA should remain on this until they are older than two years of age. It is also important to review a child’s vitamin and mineral intake.\textsuperscript{10}

**Differential diagnosis**

Cows’ milk allergy is often confused with lactose intolerance (where the body can’t digest the sugar in milk causing bloating and diarrhoea). This is rarely seen in very young children except after a gastrointestinal infection. Infants with gastrointestinal symptoms on exposure to cows’ milk protein are more likely to have cows’ milk allergy than lactose intolerance.\textsuperscript{11}

Where non-IgE mediated allergy is suspected and symptoms are delayed onset, they are typically colic, reflux, skin symptoms, and eczema exacerbations, frequent or loose stools. These symptoms can be delayed for 2–27 hours, especially in the case of cows’ milk ingestion.\textsuperscript{13} If non-IgE mediated allergy is suspected, then the suspected allergen can be eliminated from the diet for a trial of two to six weeks, then reintroduced under dietary supervision.\textsuperscript{13}

In the case of wheat, gluten and yeast (remember there are two types: bakers’ yeast, in bread, muffins, doughnuts etc; and brewers’ yeast in beer, wine, cider) symptoms of abdominal bloating, loose stools, frequency, nausea may also be present. If after six weeks of strict elimination of the suspected food, the symptoms have not improved, then that food should be reintroduced back into the diet to prevent nutritional deficiency occurring. The Allergy UK website has over 120 fact sheets available to download for more information.\textsuperscript{13}

Amena Warner is nurse advisor at Allergy UK

**References**

2. Food Allergy and anaphylaxis guidelines. EAACI 2014
3. Office for National statistics
4. BSACI. Allergy update, issue 24. 2014
6. Global strategy for asthma management & prevention 2014 (A GINA publication)
7. Global initiative for Asthma 2014
8. Food Allergy and anaphylaxis guidelines. EAACI 2014
9. www.bsaci.org/guidelines/milk-allergy
13. National Institute for health and Clinical Excellence (NICE) guideline 116