ABC of allergies

Allergy in general practice

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In parallel with the known increases in atopy (confirmed by a positive response in skin prick testing to one or more common allergens) and allergy there has been a marked increase in the proportion of general practitioner consultations for asthma, hay fever, and eczema. A greater awareness of the importance of allergy should lead to better diagnosis and management of allergy. This is essential for perennial allergic asthma in children and adults, in whom environmental control and allergen avoidance measures directed against house dust mites are of proved value in reducing asthma symptoms and bronchial hyperresponsiveness. It seems likely that these factors also reduce the need for drug treatment.

Rhinitis symptoms commonly have an allergic aetiology and may be seasonal or perennial. They may be responsible for severe impairment of quality of life. Rhinitis symptoms are frequently trivialised and misdiagnosed by both patients and doctors as "the permanent cold." This is unfortunate as avoidance measures combined with either topical corticosteroids or antihistamines, or both, are extremely effective in controlling symptoms with minimal side effects. Recent surveys have suggested that up to 80% of people with asthma also have rhinitis; treating rhinitis in such people has been shown to reduce asthma symptoms and bronchial hyperresponsiveness.

House dust mite, the major cause of perennial allergy in Britain

Some common problems (such as adverse reactions to drugs) and less common conditions (such as occupational asthma and anaphylaxis) that are due to allergy may be life threatening and require referral to a specialist allergy clinic

Role of the practice nurse

The practice nurse has a major (and now established) role in the routine care of asthmatic patients in general practice. It seems logical that this role of the specially trained nurse could be extended, with the support of the general practitioner, to include the recognition and treatment of the allergic component of asthma and also rhinitis.

The extent of the nurse's role depends on many factors, including skills, training, and knowledge. The knowledge base and skills of the doctor and the circumstances of the practice will similarly have an impact. Inquiry about allergic triggers in asthma should be routine in any asthma clinic.

An important question is whether this role should be extended to include more detailed inquiry and use of a simple range of skin prick tests. This issue is particularly important in Britain, which, in contrast to Europe and the United States, has few specialist allergy clinics in the NHS. By spending dedicated time with patients, or by enabling the doctor to spend more time with them, the trained nurse has an immense contribution to make to the task of improving management of asthma and allergy.

Allergic problems in general practice

- Asthma
- Rhinitis—both seasonal (hay fever) and perennial
- Conjunctivitis
- Eczema, particularly in young children
- Occupational asthma
- Food intolerance
- Anaphylaxis—most often provoked by stinging insects, foods such as peanuts and shellfish, or drugs

Allergy diagnosis in general practice

Accurate allergy diagnosis may be limited by the availability of consultation time. None the less, time taken early on in obtaining a full history may well save time later. Patients should be allowed to explain their symptoms in their own time. At the end of the consultation it is often helpful to ask the patient, "what is your main problem?"

Allergy history in general practice

- Symptoms: past and present; frequency and severity; seasonal or perennial; provoking factors
- Impact on lifestyle: absence from work or school; leisure time; sleep
- Nature of occupation and hobbies
- Treatment: past and present; compliance; efficacy; side effects
- Allergens in the home
- Asthma, eczema, rhinitis, or drug or food allergy: past and present
- Family history of allergic disease
- Main problem?

Skin prick tests

Skin prick testing identifies IgE sensitivity to common allergens, allows diagnosis (or exclusion) of atopy, and provides helpful objective information that should be interpreted in the context of the clinical history of symptoms (or lack of symptoms) on exposure to relevant allergens in the indoor and outdoor environment or workplace. Although skin prick testing with aeroallergens is a simple and safe procedure, it requires training in technique and, more important, in interpretation of the results. Measurement of serum allergen specific IgE, an alternative to skin tests, is done in most district hospitals.

Whether skin prick testing should be performed routinely in general practice in Britain remains a matter of debate. A pilot study evaluated skin prick testing in children and adults in 320 patients in 16 general practices in Britain. The study involved two days' training in allergy, combined with instruction in skin prick testing with four common allergens (and positive and negative controls). The participating nurses found that the techniques were simple, relatively easy to incorporate into their routine assessment of new referrals to the asthma clinic, and acceptable to both adults and children. The nurses also found the techniques acceptable. The procedure undoubtedly increased the nurses' awareness of the role of allergy in patients' asthma, although further studies should look at specific outcome measures. An important finding was the value of negative results of skin prick tests, which excluded atopy in these patients and enabled the investigators to advise patients against inappropriate allergen avoidance measures. A further important advantage was the visual illustration provided by positive results of skin tests, which could be used to reinforce the need for allergen avoidance.

Important practical considerations include the avoidance of use of antihistamines before skin prick testing. In general, when there is concordance between the clinical history and skin prick testing, management is straightforward. For example, an asthmatic patient who has symptoms on exposure to cats or dust and in whom there is an objective confirmation (from skin prick testing) should receive appropriate advice on avoidance. Similarly, a negative history together with negative results of skin prick testing excludes the need for allergen avoidance. When results are discordant (positive history with negative results, or vice versa) they may indicate the need for referral to a specialist. Skin prick tests with common aeroallergens are safe and may be performed by the practice nurse. However, in view of the theoretical risk (albeit remote) associated with giving allergens, injectable adrenaline should be available. Skin prick testing in general practice may be restricted to the four common allergens (house dust mite, cat, dog, grass) and controls (histamine and allergen diluent). Patch testing for suspected contact allergy is complex and should be performed by a specialist dermatologist.

Skin prick testing: practice points

- Always check that the patient is not taking antihistamines before performing skin prick tests
- Always include positive (histamine) and negative (allergen diluent) control tests
- In a positive result the weal is (arbitrarily) ≥2 mm greater than that for the negative control
- Skin prick tests should be performed on the flexor aspect of the forearm with a sterile lancet. The procedure should not be painful or draw blood
- Oral corticosteroids do not significantly inhibit allergen skin prick tests
- Dermatographism may confound results (although it is evident as a positive response at the negative control site)
- Skin prick tests should not be performed if the patient has severe eczema
- Measurement of allergen specific IgE concentrations (radioallergosorbent test (RAST)) is an alternative if skin prick tests cannot be performed

Advising patients on basis of history and skin prick tests

Allergy history	Skin prick test	Advice
Positive	Positive	Allergen avoidance where appropriate*
Negative	Negative	No need for allergen avoidance
Positive	Negative	Referral to an NHS allergist or an organ based physician with an interest in allergy
Negative	Positive	Referral to an NHS allergist or an organ based physician with an interest in allergy

*In cases of severe hay fever and venom anaphylaxis, refer to specialist for consideration for allergen injection immunotherapy.

Companies supplying skin prick testing kits

- Allerayde, 3 Sanigar Court, Whittle Close, Newark, Nottinghamshire NG24 2BW (tel: 01636 613444)
- ALK Abello (UK), 8 Bennet Road, Reading, Berkshire RG2 0QX (tel: 0118 931 3200)
- Diagenics, 3 Sanigar Court, Whittle Close, Newark, Nottinghamshire NG24 2BW (tel: 01636 605150)

Management of allergy in general practice

If an allergen has been identified as contributing to or causing disease then consideration should be given to the need for measures for avoiding that allergen. These measures should be regarded as complementary to drug treatment. This should not detract from time given to advising patients on the need to take prophylactic drugs regularly—for example, regular inhaled corticosteroids for asthma. In practice, total avoidance, especially of aeroallergens, may be very difficult, so the aim is to reduce overall exposure as much as possible.

For anaphylaxis total avoidance of the relevant allergen is necessary

Summary of approach for treating common allergic disorders

Rhinitis	Conjunctivitis	Asthma	Eczema	Food allergy/anaphylaxis
Allergen avoidance	Allergen avoidance	Allergen avoidance	Allergen avoidance	Allergen avoidance (may be life saving)
Antihistamine tablets or nasal spray	Antihistamine tablets	Bronchodilator inhaler as required	Soap substitute and regular use of emollients	Specialist referral (for *all* cases of anaphylaxis) and need for dietetic support
Corticosteroid nasal spray (cromoglycate first line in children)	Cromoglycate or nedocromil eye drops	Corticosteroid inhaler (cromoglycate or nedocromil are alternatives for patients with mild disease)	Corticosteroid skin creams and ointments (see earlier article)	Consider need for standby adrenaline (refer to allergist)
Short course prednisolone (eg, prednisolone 20 mg/day for 5 days, peak season)	*Never* use corticosteroid eye drops without advice/supervision of ophthalmologist	Consider adding regular long acting inhaled bronchodilator (or theophylline tablets)	Antibiotics for exacerbations	
For severe hayfever refer to allergist for consideration for immunotherapy		Prednisolone tablets once daily in morning in lowest possible dose. Courses may be required at any time for exacerbations	Referral to dermatologist for consideration of skin wraps, behavioural therapy, and (rarely) prednisolone tablets	Consider immunotherapy (in allergy to bee or wasp venom)—refer to allergist

Avoidance measures for house dust mites should focus mainly on the bedroom. The room should be ventilated regularly; mattresses, pillows, and duvets should be encased in mite proof allergen covers (which may be left in place for up to six months) with the usual bed covers for mattress, pillows, and duvet put on over the top. Patients should be advised to launder this bedding every 1-2 weeks at 60°C. Vacuum cleaners with an adequate filter to remove house dust mite allergen and prevent dissemination through the vacuum exhaust have been recommended by the British Allergy Foundation. Removal of the bedroom carpet (where possible) is important. Soft toys should be reduced to a minimum and be washable; they may be placed regularly in a freezer to kill the mites. Even when these measures are applied conscientiously improvement may take 3-6 months.

When pet allergy is diagnosed, the offending animal (and if possible all furry animals) should be excluded from the home. Psychosocial considerations may mean that the best that can be achieved is confining the animal outside or in the kitchen, with a recommendation not to replace an animal. Again, advice to remove the bedroom carpet should be given. Some studies have shown that washing a cat weekly (cat allergens are present on the fur and are extremely water soluble) may reduce allergen load when combined with removal of the bedroom carpet. Even if the pet is removed, vigorous cleaning for 3-6 months afterwards is required to minimise pet allergen concentrations in the home.

It is unlikely that patients with summer hay fever will be able to avoid pollens. The best aim should be control of symptoms with topical corticosteroids and antihistamines so that the patient may lead as normal a life as possible. Patients with severe hay fever, however, should keep windows shut (cars and buildings); wear glasses or sunglasses; avoid grassy spaces, especially in the evening, when pollen counts are highest; fit a pollen filter to the car; and consider a holiday by the sea or abroad at peak times.

The practice nurse routinely provides individualised written instructions for asthmatic patients—about drug treatment, need for peak flow monitoring, inhaler technique, etc. He or she may also advise on allergen avoidance and environmental control

Suppliers of mite proof bed covers*

Alprotec Allergen Exclusion System—Advanced Allergy Technologies (0161 903 9293)
Allerayde Perfect Allergy Control—Allerayde (01636 613444)
Jonelle Zipped Mattress Liner—John Lewis Partnership (contact local branches)
Sandra Actifresh PVC Mattress cover—The Linen Cupboard (0171 629 4062)
Medivac Anti-Allergic Bedding—Medivac Health Care Products (01625 539401)
Medibed Supreme Mattress Barrier Protector—Medibed (01282 839700)
Health Beds—Sarah Street, Rotherham, South Yorkshire S61 1EF (01709 561937)

*"Breatheable" covers let water vapour through and are more comfortable than plastic

Vacuum cleaners recommended by British Allergy Foundation

- Hoover Pure Power Range (U3141, U3142 (1400S class) U3150 U3250 (1500S class), Hoover European Appliance Group, Pentrebach, Merthyr Tydfil CF48 4TU (tel: 01685 721222)
- HVR 200P Vacuum Cleaner (Cylinder), Neumatic International Limited, Millfield Road, Chard, Somerset TA20 2GB (tel: 01460 68480)
- Vorwerk VK121ET 340, Vorwerk UK, Ashville Way, Wokingham, Berkshire RG41 2PL (tel: 0118 979 4878)
- Sebo Automatic XI Vacuum Cleaner/Upright Airbelt C1 Cylinder, Sebo UK, Merlin Centre, Lancaster Road, High Wycombe, Buckinghamshire HP12 3QL (tel: 01494 465533)

measures. The nurse may also advise patients with rhinitis how to use nasal sprays: blow the nose; tilt head so the chin is resting on the chest; hold the spray bottle upright and place nozzle just inside one nostril; apply one or two sprays as prescribed; repeat with the other nostril.

Occasionally corticosteroid nasal drops may be required, particularly for rhinosinusitis. These should be taken in the "head upside down position," best achieved by lying on your back on a bed, tilting your head right over the edge of the bed, applying drops to both nostrils and waiting for two minutes before getting up.

A Medic Alert bracelet or necklace (with an inscription that alerts other doctors to the possible cause of any future reaction) is very valuable for people at risk of anaphylaxis—for example, in response to penicillin, stinging insects, foods, or latex—and for patients with asthma who have sensitivity to aspirin. The practice nurse may teach patients how to use syringes of injectable adrenaline (epinephrine)—usually this will follow recommendation by an allergy specialist.

General practitioners can obtain a list of NHS allergy clinics from the British Society for Allergy and Clinical Immunology.

Medic Alert bracelet: important for patients at risk of anaphylaxis

The way forward

Many primary care practices already benefit from clinics devoted to the management of asthma, one of the common diseases frequently associated with allergy. Taking an allergy history with or without skin prick tests may enhance the effectiveness of asthma care. Skin testing with a limited range of reagents in general practice is both practicable and desirable. The recognition of the importance of rhinitis and the role of allergy in rhinitis and eczema will also enhance the management of atopic patients in general practice. Food allergy and occupational allergy should be considered; if such allergies are present, the patient should be referred to a specialist. The logical person to deliver allergen avoidance advice is the practice nurse, supported by the primary care doctor, and, where necessary, the local allergy service, whether provided by an NHS based specialist allergist or an organ-based specialist with training in allergy. The allergist may also effectively evaluate the role of allergy in patients presenting with non-specific symptoms—for example, the so-called multiple chemical sensitivity syndrome.

The Medic Alert Foundation provided the picture of the Medic Alert bracelet.

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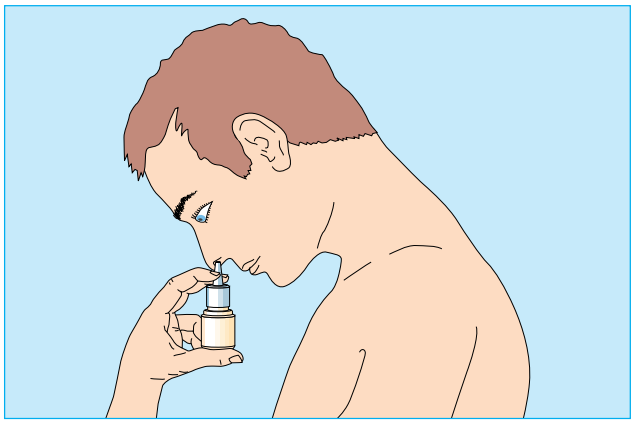

How to use a nasal spray

Useful organisations

- British Society for Allergy and Clinical Immunology, 66 Weston Park, Thames Ditton, Surrey KT7 0HL (tel: 0181 398 9240)
- British Allergy Foundation, Deepdene House, 30 Bellegrove Road, Welling, Kent DA16 3BY (patients' helpline: 0181 303 8583)
- National Asthma Campaign, Providence House, Providence Place, London N1 ONT (tel: 0171 226 2260)
- Anaphylaxis Campaign, PO Box 149, Fleet, Hampshire GU13 9XU (tel: 01252 542029; fax: 01252 377140)
- Medic Alert Foundation, 17 Bridge Wharf, 156 Caledonian Road, London N1 9UU (tel: 0171 833 3034; fax: 0171 713 5653)
- National Asthma and Respiratory Training Centre, The Athenaeum, 10 Church Street, Warwick CV34 4AB (tel: 01926 493313; fax: 01926 493224; email: enquiries@nartc.org.uk)

When to refer patients for specialist allergy advice

- For investigation and management of anaphylaxis
- If the diagnosis of allergy is in doubt—for example, discordance between the clinical history and the results of skin prick testing or the radioallergosorbent test
- If food allergy is suspected (for assessment and expert dietetic input)
- If occupational allergy is suspected
- In cases of urticaria in which an allergic aetiology is suspected
- For consideration for immunotherapy (in cases of severe hay fever, allergy to venom from stinging insects)
- To exclude allergy as a cause of non-specific illness

Further reading

- Sibbald B, Barnes G, Durham SR. Skin prick testing in general practice: a pilot study. *J Adv Nurs* 1997;26:537-42
- The British guidelines on asthma management 1995. Review and position statement. *Thorax* 1997;52(suppl 1)
- Lund V on behalf of the International Rhinitis Management Working Group. International consensus report on the diagnosis and management of rhinitis. *Allergy* 1994;49(suppl 19):1-34

The ABC of allergies is edited by Stephen Durham, honorary consultant physician in respiratory medicine at the Royal Brompton Hospital, London. It will be published as a book later in the year.

Correction

ABC of allergies

An editor's error occurred in the chapter "Anaphylaxis" by Pamela W Ewan (9 May, pp 1442-5). In the footnote to the table showing doses of intramuscular adrenaline in children, the final sentence should have read: "Reduce dose in children of below average weight [not height]."