Operational Update for Otago/Southland Community Referrers

October 2013

ALLERGY TESTING Dr Richard Steele, Consultant Immunologist, SCL

From the beginning of November, all sites currently offering skin prick testing will be offering both a **food** and an **aero** panel. You will need to indicate when requesting which panel is required. Allergens included are:

Food allergens	Aeroallergens
Egg white	House dust mite
Fish Mix	Cat
Shrimp	Dog
Peanut	Plantain
Cow's milk	Mould mix
Soybean	Aspergillis
Wheat	Grass mix
	Birch

Introduction to allergy testing

Allergy is a significant and under-recognised problem in New Zealand. With few fully trained specialists practicing in this area, the responsibility for managing allergy will fall to primary care. This also impacts on level of teaching and training both at the medical schools and in post graduate study. This makes it challenging for primary care to assess and manage the allergic problems they encounter in their patients. In addition the facilities to manage allergy are very limited within both the private and public health system.

The information outlined in this article is aimed to introduce to the requestor to some of the principles in assessing allergy and how best to approach testing in this area. There are a number of links below which I would encourage the requestor to use when they encounter a problem with allergy and to further educate themselves.

The importance of the clinical history

The most important tool in allergy is the clinical history, and the only way to make full use of this tool is to understand something about the pathophysiology, epidemiology and clinical presentation of allergic conditions.

When assessing a patient with allergy there are two very crucial questions that the clinician should be asking themselves

1. Are the symptoms that the patient has consistent with allergy?
2. If the symptoms are consistent with allergy, what pathophysiological mechanism is involved?

Are the symptoms that the patient has consistent with allergy?

Patients will often attribute their symptoms to problems with their immune system and to environmental exposures including chemicals, foods and drugs. Taking a careful clinical history and having a greater understanding of the strengths, limitations and indications of allergy testing will assist in making the proper diagnosis and reduce the risk of false positive results where the pre-test probability of allergy is low. A good example of a condition where allergy testing is commonly ordered but of little use is chronic urticaria and angioedema. This condition if not precipitated by a physical stimulus is likely to be autoimmune resulting from an autoantibody directed against the IgE receptor and other components on mast cells leading to release of the mediators that cause the rash. Many patients will try and attribute the rash to something in their diet and ask for allergy testing and it is usually not helpful. Another area where allergy testing is over-ordered is in patients with chronic non-specific abdominal symptoms. Patients with symptoms of irritable bowel syndrome will commonly enquire as to whether there is any testing available to determine the food they are reacting to. The testing is rarely helpful and usually misleading for the patient.

If the symptoms are consistent with allergy, what is the pathophysiological mechanism?

If after assessing your patient you decide that your patient does have an allergy, you need to consider the potential mechanism. The first question is whether the reaction is immediate or delayed. If immediate or the symptoms suggestive of an immediate reaction (for example urticaria, angioedema) then the next question you need to consider is whether the reaction is IgE mediated or not. There are a number of substances which can cause acute reactions associated with urticaria and angioedema that are not IgE mediated particularly drugs. For non-IgE mediated reactions we rely heavily on the history and sometimes challenge to make the diagnosis as there is no laboratory test that is going to assist you. Commonly used drugs which lead to non-IgE mediated reactions include aspirin and radio-contrast agents.

Commonly used drugs where immediate reactions are IgE mediated include beta lactam antibiotics and muscle relaxants and for these drugs allergy testing can be useful. Although there are specific IgE tests available for muscle relaxants and beta lactams, their performance is not good. Skin prick and intradermal skin testing carried out by specialists is usually the preferred method of testing.

For delayed reactions, the skin prick and specific IgE testing offered by the laboratory is not useful. Again for many of these reactions we rely heavily on the clinical history and a good knowledge of common culprits that cause problems. Patch testing, which has limited availability and is generally performed by some allergists and dermatologists is useful for contact dermatitis and eczema and is not available through diagnostic laboratories.

When should I be ordering allergy testing?

IgE mediated allergy testing is useful in following common situations:

- Rhinitis/rhinoconjunctivitis/rhinosinusitis/allergic conjunctivitis
- Asthma
- Atopic dermatitis (eczema)
- Acute reactions related to food such as those manifested by anaphylaxis, immediate acute urticaria, or acute flare of eczema

What allergens should I be ordering?

In most situations, a more focussed approach is better than ordering multiple allergens. Like many tests it is better to order allergy tests to answer a specific clinical question that is being asked. The more unnecessary allergens you order the more likely an unhelpful false positive result may occur which could contribute to patient morbidity through for example unnecessary avoidance of a particular food. An important example is rhinitis/conjunctivitis and asthma where ordering the common aeroallergens is appropriate but not food allergens.

Most diagnostic laboratories will provide a limited panel of skin prick tests to common aero and sometimes food allergens. This should cover the majority of relevant clinical presentations. You do not have to order the whole panel if you do not need it. For example, if the problem is egg allergy, then only order allergy testing for egg.

When should I order skin prick tests and when should I order blood tests?

In general skin prick tests are preferred over blood tests. They are more immediate for the patient and generally cheaper. Clearly these are not readily available everywhere and for less common allergens. There are also certain situations where blood tests would be favoured over skin prick tests such as patients with generalised dermatological conditions, dermographism, poor subject co-operation, pregnancy and patients unable to cease drugs with anti-histaminic properties. In most situations you will not require both skin prick and specific IgE testing for the same allergen.

Interpreting the tests

Allergy testing can be misleading. Sensitisation as documented on allergy tests occurs without clinically significant allergy and clinically significant allergy can occur with negative results. For example, you commonly see low positive results for peanut in children with eczema who tolerate peanuts without reactions. If avoidance is being considered in this situation then expert advice should be sought.

Generally, the large the wheal on skin prick testing or the higher the result on specific IgE testing the more clinically significant and specific the result becomes.

Summary

Allergy testing can be extremely useful for a number of situations as described above. However, it cannot take the place of knowledge and a well-directed history based on that knowledge. Given the high prevalence of allergy in New Zealand, I would encourage you consider extending your knowledge. Interesting and relevant topics include food allergy and eczema, the oral allergy syndrome, storage mite anaphylaxis, anaphylaxis to anasakis and wheat dependant exercise induced anaphylaxis (WDEIA). I hope the links below will be helpful to you and your practice.

The Australasian Society of Clinical Immunology and Allergy http://www.allergy.org.au/
The American Academy of Asthma, Allergy and Immunology http://www.aaaai.org/home.aspx
The Euro Academy of Allergy and Clinical Immunology. http://www.eaaci.org/index.php
World Allergy Organisation: http://www.worldallergy.org/index.php
The contact allergen database: http://www.contactallergy.com/
The Thermoscientific specific IgE allergen database http://www.phadia.com/allergen-information/

SEMEN ANALYSIS

Could you please ask patients to deliver their samples directly to the laboratory? If patients drop them off at a Collection Centre they are usually outside the time guidelines by the time they have been re-delivered to the laboratory.

Dunedin – 3rd floor of the Clinical Services Building at the Hospital

Invercargill – 1st floor of the main hospital block

TEST RESTRICTIONS

SCL is now applying the following restrictions, in line with the national guidelines. These restrictions will apply across all sites where SCL hold the contract for sendaway testing (Otago. Southland, South Canterbury, Nelson, Marlborough).

The following tests will only be funded if ordered by a specialist or with the approval of a Pathologist. For all other referrals the patient will be charged. For commercial requests we charge the list price for the referral laboratory plus a bleeding fee of $10 and an administration fee of $17 for sending samples to a third party laboratory.

IGF BP -3	Urine iodine
Insulin (unless post Bariatric)	DHEAS
Homocysteine	Lipoprotein (a)
Dihydrotestosterone	CoQ10
ApoE genotyping	Cortisol binding globulin
Zinc and selenium	Copper (unless post Bariatric)
Blood and urine mercury	Vitamin B1 and B6
Dihydro testosterone	Hs CRP

Red cell magnesium – no longer available unfunded

REQUISITIONS and REQUESTS

Care please with requisition forms – errors this month have included
- A woman sent in with a form with all her husband's details (a Midwife)
- Five misidentified patients (two from the same House Surgeon)
- Two referrals with incorrect NHIs on them (GPs)

Faxing the lab

When faxing the laboratory, please include a clear explanation of why you are faxing us. The lab receives dozens of faxes a day, and often we find we are faxed a lab request form with no explanation (is it a home visit request? A test-add? Did the patient lose their form?)

TEST UPDATE

Faecal Calprotectin been brought in house in Dunedin from October the 1st. We will continue to screen, with negative results reported daily as a final result. Any screen positive tests will be reported as screen positive and will be tested by the Phadia EliA quantitative assay. The Quantitative test will be run weekly.

Alpha-1-antitrypsin has been brought in house in Dunedin from October the 1st.

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