

# Addressing the need for an adult allergy clinic in Malta

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## Abstract

The incidence of allergy is globally on the increase. Allergology is a relatively new speciality with rapidly growing needs. Many patients have co-existent allergic conditions including asthma, eczema, allergic rhinitis, food and drug allergy. It is recommended internationally that patients suffering from allergic conditions including anaphylaxis are investigated, treated and followed up by an allergy specialist in a safe environment with resuscitation facilities readily available, especially when certain investigations are performed. This article highlights the importance of the need for such an allergy service for adult patients at Mater Dei Hospital, in patients with new onset or previously undiagnosed allergic conditions as well as transition of care from paediatric services, with the intention of performing specialist investigations, providing optimal expert management to allergy sufferers locally whilst improving patients' quality of life. A multidisciplinary team approach would further improve this service.

## Key Words

Allergy service, adults, Malta

## Introduction

Allergy is a form of exaggerated sensitivity (hypersensitivity) to a substance which is either inhaled, swallowed, injected, or comes into contact with the skin, eye or mucosa. The term 'allergy' is used for situations where hypersensitivity results from heightened (or 'altered') reactivity of the immune system in response to external or 'foreign' substances. Foreign substances that provoke allergies are called allergens.<sup>1</sup>

The incidence and prevalence of allergic diseases has been steadily increasing globally.<sup>2</sup> In Western countries the prevalence of respiratory allergies (asthma and allergic rhinitis) has stabilized<sup>3</sup> while the prevalence of food allergy has shown a consistent increase.<sup>4</sup> Developing countries on the other hand have shown a sustained increase in all types of allergies, in children and young adults.<sup>3,5</sup>

While the prevalence of allergic disease has increased, many countries have struggled to develop dedicated allergy services in line with demand, while in others still, the specialty is not established. And it is not just the overall prevalence of allergy that has increased, but there is evidence suggesting that severe reactions are on the increase as evidenced by increasing incidence of presentations at emergency departments.<sup>6</sup> On top of this the same pathophysiological mechanism may manifest as multisystem disease in the same patient, resulting in a complex disorder requiring the input that only a specialist in the field can provide. This 'multi-system allergic disease' may manifest as asthma, eczema, food and drug allergy in the same patient, with inputs from specialists in different fields, leading to a piecemeal, sub-optimal, inefficient and non-holistic healthcare delivery. Specific testing to uncover the offending allergen with resultant management options such as allergen elimination and allergen specific immunotherapy, requires a level of expertise that can only be acquired through specific

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training. A further setback to allergy sufferers is that policy makers fail to grasp the gravity of mis/un-managed allergic disease and its negative impacts on quality of life, economic burden on health services and family, and even adverse long-term health effects, lower educational achievement and life earnings. In addition, allergy is not generally perceived as a serious condition with major implications for health and quality of life.<sup>7</sup>

Studies have shown that effective allergy services can not only improve quality of life, but can also be cost-saving.<sup>8,9</sup> Allergy needs a 'whole system' approach in which allergy is treated as a condition in its own right, and not as a series of diseases depending on the organ system involved.<sup>1</sup>

## Allergic conditions

### *Anaphylaxis*

In line with the rising prevalence of allergic disorders there is reported to be a corresponding increase in patients presenting to an emergency department with anaphylaxis.<sup>8</sup> Anaphylaxis is the most severe form of allergic reaction and requires urgent medical treatment. Patients presenting to the emergency department with symptoms of anaphylaxis should be treated according to local guidelines, admitted according to the severity and prescribed an adrenaline auto-injector and given an anaphylaxis action plan. According to a recent yet unpublished audit carried out locally, 68.6% participants who included medical doctors across various working grades and pharmacists, did not feel confident explaining to patients when to use an adrenaline auto-injector while 72.5% of participants did not feel confident explaining how to use it. It is unacceptable to provide an adrenaline device to someone without teaching how and when to use it.

Following an international retrospective analysis, it has been recommended that appropriate follow up to a specialist allergy service is strongly recommended for patients with anaphylaxis.<sup>10,11</sup> Allergist referral rates ranged from 0% to 84%, with a mean of 33%. However, to date, Maltese patients suffering from anaphylaxis are managed by emergency physicians with no out-patient referral and are admitted under the care of general physicians, when hospitalization is deemed necessary. Very often, the trigger for anaphylaxis is identified. However, in certain cases, the cause is not found and in such cases it is advisable to refer to an allergist for organization of further

investigation, confirmation of the diagnosis, education about use of the adrenaline auto-injector, to provide sensible expert advice as well as to provide an anaphylaxis action plan.

### *Food allergy*

Food allergies are IgE, non-IgE or mixed immune-mediated hypersensitivity reactions, broadly grouped into acute reactions or chronic allergic reactions. The role of an allergist includes making the diagnosis of food allergy or indeed excluding it! Requesting and interpreting the correct investigations, excluding food allergy or diagnosing food intolerance,<sup>12</sup> identifying quantities/level of cooked food tolerated, finding suitable and well-tolerated alternatives and investigating for possible co-existing allergies, are the remit of a specialist. Getting it wrong can have fatal consequences to the patient, and disastrous consequences to professionals dabbling in this area without the necessary knowledge and experience. The lack of regulation and control in this area has led to patients falling victims to speculation at best and harmful advice at best. Patients are being made to pay good money for unreliable tests (such as IgG testing for food allergy, the notorious 'food intolerance' test) and then given dangerous advice based on these tests with elimination of staple foods from their diet with potentially devastating effects on their health. Follow up and exact, low-risk timing of introduction of foods can only be offered by experts in the field. Less common conditions such as oral allergy syndrome, lipid transfer protein syndrome and food-exercise induced anaphylaxis require an allergy specialist to make the diagnosis and provide appropriate advice. In addition, the role of a paediatric allergist is to identify certain conditions such as food protein induced-enterocolitis syndrome, eosinophilic oesophagitis which are sometimes associated with failure to thrive.

The oral food challenge (OFC) test remains the gold standard for the diagnosis or exclusion of immediate or delayed immediate or delayed. Decisions to undertake such tests are only taken once a risk assessment is performed in each case based on history and allergy testing including skin testing and blood measurements of food specific IgEs,<sup>12</sup> and should only be undertaken in a unit with the capacity to deal with severe allergic reactions.<sup>13</sup> A negative oral food challenge result allows introduction of the food into the diet, whereas a

positive oral food challenge result provides a sound basis for continued avoidance of the food.<sup>13</sup>

An appropriately trained dietitian's role in managing food allergy is invaluable.<sup>12</sup> Patients and relatives need to be taught how to interpret the list of ingredients on the labels of manufactured foods, identify hidden ingredients, be educated on cross-reactivities and find alternatives to avoided foods. An important parallel role is to ensure that those with established food allergy, especially growing children, have a nutritionally adequate diet. The provision of recipes, advice when eating out, and general encouragement are additional measures that are helpful. An allergy department should have the services of both adult and paediatric dietitians.<sup>1</sup>

Policies governing safety in the food and beverage industry rely on expert advice from allergy experts. Food labelling and proper food handling to avoid cross-contamination are essential to ensure safety of consumers. There are still big lacunae in this area although there is a move in the right direction. One dangerous example pertaining to the local setting is the potential confusion of ingredients in the traditional Easter pastries, the 'figolla', which traditionally includes an almond paste as one of its ingredients, but which has frequently been replaced by a peanut paste, without the necessary labelling. Imagine the disastrous consequence to a severely peanut allergic patient!

### ***Respiratory Allergy - Asthma and Allergic Rhinitis (Hay fever)***

Asthma is among the most common chronic diseases of the western world. In adults and children, the asthmatic response can be triggered by a wide variety of agents including allergens. Allergy is a common cause of childhood asthma, and the substantial increase in incidence of asthma over the last three decades is largely allergy-driven. It is important to establish the relative contribution of ongoing poor asthma control versus triggers, by means of careful history-taking and appropriate investigations to establish which allergens may be contributory. The significance of a specific allergen in a particular individual may be suspected from the clinical history. However, allergy testing may be required. Awareness of the cause allows allergen avoidance which may result in better control of the condition, leading to a reduction in the need for drug therapy.<sup>1</sup>

Allergic rhinitis, whether seasonal or perennial,

represents a major cause of morbidity with impairment of quality of life for many sufferers. The results of skin prick tests or allergen-specific IgE, together with the history provide helpful supportive evidence. The mainstay of treatment of rhinitis remains the identification and, if possible, the avoidance of provoking allergens, together with conventional treatment options, which are routinely managed by ENT or respiratory specialists. Allergen specific immunotherapy is an effective treatment for allergic rhinitis patients but requires an accurate within selected patients and would require expert allergist input, in order to manage the patient appropriately. The fact that in the ISAAC study, Maltese teenagers had the third highest rate of allergic rhinitic symptoms in the world,<sup>4</sup> strengthens the claim for the need of an adult allergic clinic in Malta

### ***Atopic Eczema***

The allergist has a role to play, mainly to determine allergic and other triggers. The role of allergic triggers can be very variable and is important to determine precisely. It can be difficult to determine in atopic dermatitis. Other forms of eczema are dealt with by dermatologists.<sup>1</sup> Affected individuals often have other atopic disorders such as allergic rhinitis, asthma or food allergy, and commonly several disorders are present in the same patient,<sup>1</sup> suggesting that an allergist should be involved in such cases.

### ***Urticaria/Angioedema***

Urticaria and angioedema can be IgE- or non-IgE-mediated, and the allergist has a role to play in both.<sup>1</sup> Isolated urticaria is often dealt with primarily by dermatologists, but allergists will have a role in some patients, such as, if there is associated angioedema or if an allergic cause is a possibility. Angioedema may occur alone, with urticaria, or with a variety of other symptoms as part of a multi-system disorder. Angioedema may be a manifestation of anaphylaxis. An allergist is best placed to manage such patients, whether the disease is IgE-mediated, as in food allergy, or due to other mechanisms, as with drugs such as angiotensin converting enzyme inhibitors. It is important to determine whether there are specific triggers or whether urticaria and angioedema are idiopathic.<sup>1</sup>

### **Drug allergy**

Drug allergy is an adverse drug reaction mediated by a specific immune response directed at the drug, or a drug breakdown product, either alone or in combination with a body protein acting as an allergen. Allergic drug reactions are immediate or delayed, local or generalised. Both anaphylaxis and severe delayed drug allergic reactions can be fatal. Few allergy centres in the UK are able to investigate drug allergy fully, and diagnostic tests are not straightforward.<sup>1</sup> The current local situation includes the availability of a limited number of specific IgE testing, as is in the UK.<sup>14</sup> Drug provocation tests which include a direct challenge with specific drugs should be undertaken at specialist allergy centres only when investigations have been exhausted and the diagnosis remains in doubt. The challenge should be designed either to implicate or exclude a drug, or to identify a suitable alternative agent. The risk/benefit must be assessed in every case. These tests, which are very time-consuming, should only be carried out in a specialist centre by staff trained in the treatment of anaphylaxis.<sup>1,14</sup> No such service is available to date in Malta.

### **Venom Allergy**

The incidence of venom allergy in Malta is not known. Local venom reactions have only a low risk of anaphylaxis. However, systemic reaction do occur. The risk of a further reaction will depend on a number of factors. Immunotherapy (desensitisation) treatment is available for bee and wasp venom. Patients may be prescribed an adrenaline auto-injector, if they are considered at risk of a severe reaction. At risk patients would require assessment to assess the degree of risk, provide professional advice and possibly prescribe immunotherapy when clinically indicated. Venom immunotherapy is highly effective, protecting about 95% of patients with vespid venom allergy and 80–90% of those allergic to bee venom. Quality of life is also improved. This is best done in a specialist allergy centre where many patients are being treated, with good systems for monitoring and early treatment of systemic reactions.<sup>1</sup>

### **Quality of life**

Several studies have shown that patients suffering from allergic conditions, particularly food allergy, together with their caregivers, have been

identified to suffer from anxiety<sup>13,14</sup> and depression,<sup>23</sup> resulting in a worsened quality of life,<sup>16,18-20</sup> due to the burden associated with this condition, namely the persistence of allergen avoidance as well as the constant fear of developing an allergic reaction,<sup>21</sup> possibly complicated by life-threatening anaphylaxis.<sup>22</sup> In fact, in the Euro Prevall project, the quality of life in such patients has been given great importance.<sup>18</sup> Completing one of the several quality of life questionnaires available for patients with food allergy<sup>23</sup> might have been useful to achieve a baseline for this patient and monitor response after the intervention of the play specialist. Questionnaires have been developed to assess the impact both on the child as well as the caregiver.<sup>20</sup> Milk and egg allergy demonstrated a worsened quality of life compared with other food allergies.<sup>18</sup>

### **Paediatric allergy services**

For the allergic child, optimal growth, educational attainment, and social and psychological development, as well as health and wellbeing, are all at risk. Children with allergic disease therefore have a set of needs which are distinct from those of adult allergic patients and which place particular importance on early recognition and effective management of allergy.<sup>24</sup> The appropriate treatment of allergy is particularly important in children whose quality of life, education and growth may be greatly affected by their condition.<sup>1</sup> Food allergy is common and can be life-threatening. Asthma has been identified as potentially preventable if it is treated in early life. Many children have allergic diseases affecting several organ systems, and are inadequately treated because the allergic trigger goes unrecognised.<sup>1</sup>

In our local hospital, paediatric patients are investigated and managed by a paediatric allergist with limited facilities in a clinic, which is part of an adult ward. Investigations are limited to a small number of different allergens available for skin prick testing. Food components are brought in by parents/carers for prick-to-prick testing, resulting in parents spending a considerable amount of money to buy certain food products of which only a tiny amount is utilised. The service is run in the absence of a nurse or a dietician.

### **Adult allergy services**

Adult allergy services in our local hospital so

far, have traditionally been provided by different non-allergy specialists according to the organ system affected; for example severe allergic asthma by respiratory physicians, food allergy and eosinophilic gastrointestinal conditions by gastroenterologists, allergic rhinitis by ENT specialists, allergic conjunctivitis by ophthalmologists and atopic dermatitis, urticaria by dermatologists. Alternatively, many allergy cases are dealt with by general practitioners. However, most organ-based specialists and general practitioners have no formal clinical training in allergy and have no ready source of expert advice to date. Whilst these specialists have an important role in the management of allergic disorders, a partnership needs to be developed with specialist allergists.

In international hospitals providing allergy services, allergy specialists deal with a wide range of disorders, such as rhinitis, asthma, urticaria, angioedema (including hereditary angioedema), eczema, anaphylaxis, and allergy to food, drugs, latex rubber and venom. The above disorders may result from generation of IgE antibody (allergic antibody), but the same disorders and symptoms, such as anaphylaxis, drug or food allergy, can occur through mechanisms that are independent of IgE. Whilst symptoms may be restricted to one organ, many allergic disorders may demonstrate multisystem disease.<sup>1</sup> This implies that it would be ideal to review and manage the patient in a multidisciplinary approach.

### Current deficits

Current deficits in local allergy services include the complete absence of a structured adult allergy service in a recommended set-up, a paediatric service in limited environment without the appropriate facilities, a lack of allergens available for skin prick testing as well as lack of availability of food products available for performance of prick-to-prick testing and for food challenges. In addition, there is no specialist nurse or dietician for direct, easy access referral.

### Benefits of a specialist allergy service

- The provision of specialist allergy care led by allergy specialists formally trained in both adult and paediatric allergic disease so that appropriate standards of care can be achieved and maintained.

- The availability of a referral centre for patients suffering from anaphylaxis, to be reviewed and managed urgently.
- The provision of accurate diagnosis and management of allergic diseases using readily available tools and equipment, while excluding allergy in others, allowing the patient to proceed with other appropriate investigations.
- Well-equipped facilities for diagnostic challenge tests, day-case services, and allergen immunotherapy.
- The availability of allied healthcare professionals such as a specialist nurse and dietician.
- Implementation of evidence-based guidelines of various allergic conditions.

### Conclusion

We recommend that a co-ordinated and structured allergy service is developed to diagnose and treat a whole range of allergic diseases, providing expert advice, diagnostic tests and practical help for patients affected by allergies. It should be run by skilled allergists having the expertise to manage both adult and paediatric patients, supported by a skilled dietician as well as a trained allergy nurse, with access to a wide array of necessary investigations, in a safe well-equipped environment. A multidisciplinary approach would be ideal to diagnose and manage allergic conditions particularly when co-existent, whilst expertly managing less common allergic cases in an appropriate setting. The aim would be to improve patient care, prevent severe and fatal allergic reactions, avoid inappropriate under- and over-management as well as avoid the costs implicated with mismanagement.

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