

## AN IDEAL CHILDREN'S CHEST AND ALLERGY CLINIC

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### ABSTRACT

The practice of Allergology has reached great heights in the last 2 years. South Africa has progressed from having Diplomates in Allergology to the recognition of sub-specialist Allergologists in Paediatrics, Internal Medicine and Family Practice. This is a new era for those of us interested in bringing the science of Allergology to our patients and already there is a sense that Allergology has joined other subspecialties in our country, to advance this aspect of science and medicine. However, the number of subspecialists in Allergology will remain small for many years and in the mean time, we will need our Allergy Diplomates, and other interested clinicians, to uphold the practice of Allergology in their own practices. This article is intended to provide a useful philosophical guide to what would make the general allergy clinic better able to meet the needs of patients. In this article we provide some ideas firstly for the ideal Children's Chest and Allergy Clinic. We believe that allergic children and their parents want three things. They want an answer (a diagnosis), then they want a treatment (a therapeutic strategy) and lastly they want a therapeutic strategy that works or leads to a solution (improved quality of life). This article will suggest ways to achieve this in your own clinic.

### INTRODUCTION

Asthma and allergic rhinitis (AR) are the most common chronic conditions causing ill health in South Africa. The ISAAC Study has revealed that the prevalence of asthma is in the order of 20% and allergic rhinitis in the order of 37% in school children in South Africa.<sup>1</sup> Because they are so common, these conditions deserve our attention. Our attention is best served in creating the ideal home to manage these children well, so that we restore quality of life to sufferers. Most doctors are also familiar with the fact that both asthma and allergic rhinitis, whilst seldom fatal, are still a cause of much morbidity (especially impaired quality of life), both in South Africa, and around the world. In 2010 we published an article in this Journal classifying the barriers to optimal management and control of these two airway diseases into four domains (Table I).<sup>2</sup>

The subject of this article is to try and marry the many doctor-related and patient-related factors into the concept of creating an ideal setting to manage allergic children better. We believe that that vehicle is a Children's Chest and Allergy Clinic. There are many of these now popping up around South Africa, as more doctors achieve the Diploma in Allergology. This article explores what we consider should make the ideal format and tools employed in such a clinic.

**Table I.** Barriers to optimal control of asthma and allergic rhinitis in South Africa

#### Health Authorities:

- Rising prevalence
- Swamped health care services
- Competing respiratory diseases especially HIV/TB
- Cost

#### Doctors:

- Under-recognition and delay to diagnosis
- Inappropriate management
- Lack of assessment of control

#### Patients:

- Under-recognition
- Overuse of over-the-counter (OTC) preparations
- Lack of control
- Non-adherence
- Inability to use delivery devices
- Cost of medication

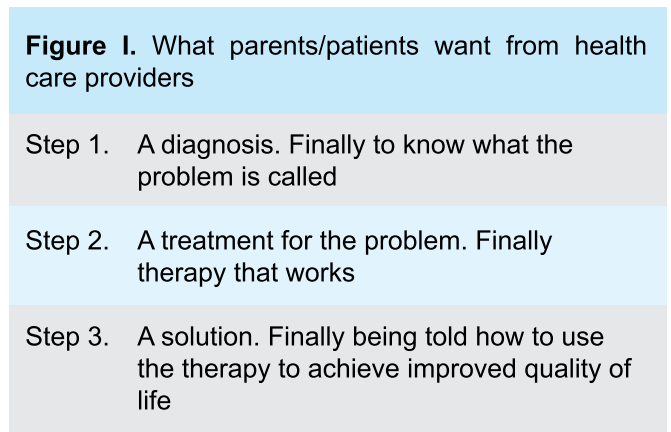
#### Environmental Factors:

- Allergen seasonality
- Pollutants and legislation

### PHILOSOPHICALLY SPEAKING

It may be important, as you set up your clinic, to start with your motivation. Although making money and paying the bond is important, let me assure you that as you develop a reputation for great care and compassion, patients will gravitate toward you. Making profit your driving force will be much less important. After all, with the prevalence figures mentioned above, there are more than enough atopic children out there and unfortunately, enough of them that are so poorly controlled presently, that a wholistic centre for care is a sure success.

The other philosophical principle we want to mention, is the idea of how control of allergic or atopic conditions makes sense. Remember that all patients with a chronic, uncontrolled condition want three things. They want an answer (a diagnosis), then they want a treatment (a therapeutic strategy) and lastly, they want a therapeutic strategy that works or leads to a solution (improved quality of life). This may seem simple and obvious but it is amazing how often we don't give that to our patients. We, as medical practitioners, often fail to meet these basic needs. Let's highlight these guiding principles in a figure (Figure 1).



So now that we have our motivation and principles in place, let's get started.

### DIAGNOSIS OF ATOPY

The key medical principles of diagnosis, of all the medical allergic and atopic conditions, are beyond the scope of this article and in order to run a successful clinic of this nature, we assume you have at least a basic understanding and knowledge of the common problems. That said, remember that most children with an allergic or atopic condition will present in one of a limited number of ways (Table II).

All of these symptoms have allergic causes and all have non-allergic causes and triggers. The first important principle in

**Table II.** Common presenting complaints of allergic/atopic children

<p><b>Respiratory - Upper respiratory tract</b></p> <ul style="list-style-type: none"> <li>- Runny nose</li> <li>- Itchy nose</li> <li>- Sneezing</li> <li>- Blocked nose</li> <li>- Frequent upper respiratory tract 'infections'</li> </ul>
<p><b>Respiratory - Lower respiratory tract</b></p> <ul style="list-style-type: none"> <li>- Cough</li> <li>- Wheeze</li> <li>- Frequent 'bronchitis' or 'pneumonia'</li> </ul>
<p><b>Skin</b></p> <ul style="list-style-type: none"> <li>- Itchy skin rash with wheals</li> <li>- Itchy skin rash with erythema and scaling</li> </ul>
<p><b>Gastrointestinal</b></p> <ul style="list-style-type: none"> <li>- Vomiting</li> <li>- Diarrhoea</li> <li>- Bloating</li> </ul>
<p><b>Anaphylaxis events</b></p> <ul style="list-style-type: none"> <li>- Collapse after an exposure</li> </ul>

your new clinic, is to correctly label the problem, be it atopic or not. If the condition has an allergic label, it is important to manage that condition adequately, to restore normality to life. If the condition is non-allergic, you may still wish to manage that child, but your therapeutic principles will be different.

So a great Children's Chest and Allergy Clinic requires a set of diagnostic modalities to address the problem and its aetiology.

Each of the conditions listed in Table II have associations with known atopic conditions; allergic rhinitis, asthma, urticaria (acute or chronic), atopic dermatitis, food allergy and anaphylaxis (Table III).

Now here's the catch in the 'Allergy world'. All these allergic conditions, whilst associated with an allergic cause, are all about inflammation of the organ involved. Diagnosis requires, at least in some, a solid diagnosis of this inflammatory event. This is epitomised in asthma, where inflammation leads to airway hyper-responsiveness, which requires objective lung function testing in older children and adults. Whilst this normally entails spirometry, it may be

**Table III.** Atopic conditions

Allergic rhinitis
Asthma
Urticaria (acute or chronic)
Atopic dermatitis
Food allergy
Anaphylaxis

possible to get by with peak flow recordings. For the correct use of lung function testing, we refer you to the South African asthma guidelines<sup>3,4</sup> and the article 'Dealing with spirometry in children under six years of age: challenges and opportunities in asthmatics' in this issue of the journal. Even the inflammation of allergic rhinitis can be diagnosed with scientific rigor by employing Hansel's staining of nasal secretion. Defining the inflammation is seldom employed in skin allergic conditions (where biopsies are seldom necessary) and in food allergy (although gastrointestinal mucosal biopsy is important in eosinophilic oesophagitis, celiac disease and refractory cases).

**DEALING WITH SPIROMETRY IN CHILDREN UNDER SIX YEARS OF AGE: CHALLENGES AND OPPORTUNITIES IN ASTHMATICS**



Figure 3. An ideal children's chest and allergy clinic at work

Therefore, where possible, documentation of the inflammatory component of an atopic disease is, at least, as

important as the allergic component, because in many conditions much of the therapy is directed against inflammation.



Figure 3. An ideal children's chest and allergy clinic at work

Once established as an inflammatory disease with a possible allergic basis, allergy testing is important. Here the diagnosis revolves around establishing the possible IgE and other mechanisms of allergy. In most of our current allergy tests, tests are for IgE (see the article 'New laboratory methods of diagnosing allergic disease' in this issue of the journal). The ideal allergy clinic requires a panel of skin prick tests (SPT) performed by a skilled operator. Airway symptoms require an aeroallergen panel, whilst skin and gut problems require both inhalant and food panels (Table IV).

Extensive SPT panels are not required in most clinics. Reference clinics can perform those were indicated.

SPTing is reliable, immediate and cost effective. The correct label of an atopic condition requires this. Chronic rhinitis that does not have a positive SPT is therefore not allergic rhinitis and somewhere in the patient's journey through therapy, you will need to entertain the other possible causes requiring investigation.<sup>6</sup>

So what about the role of the laboratory? There is no question that as an expert operating a children's chest and allergy clinic, you will require testing for ImmunoCAP IgE and other tests (including the CAST test, and immunoCAP tests, to more exotic allergens such as drugs and certain foods). However, not every potential allergic child requires a full panel of blood tests, at least not initially.

**Table IV.** Common SPT panels required\*

**Aeroallergens:**

- Bermuda grass
- 5-grass mix
- Tree mix
- Mould mix
- House dust mite (HDM)
- Cat
- Dog
- Cockroach

**Food allergens:**

- Cow's milk
- Hen's egg (usually egg white)
- Soy milk
- Wheat
- Peanut
- Fish

\* may be modified in certain regions of the country<sup>5</sup>

At this point, your patient with symptoms (especially chronic and recurrent symptoms) will know if the problem has an inflammatory basis, and then that this inflammatory disease has an allergic association.

You have now met the first principle - An answer or diagnosis.

**THERAPY OF ATOPIC CONDITIONS**

Again this article cannot define how each atopic condition is best managed. However there are some important principles that should be utilised.

Mainly many of the conditions you see have three therapeutic principles (Table V).

**Table V.** Therapeutic principles for atopic conditions

Treat the inflammatory condition with anti-inflammatory therapy

Avoid a causative allergen/s

Consider the patient for immunotherapy if possible and as indicated

This schema means that the basis of therapy requires that most patients need topical anti-inflammatory therapy. This may be topical steroids in the nose (allergic rhinitis) or lower airways (asthma), or on the skin (atopic dermatitis).

Once this is safely instituted, allergen avoidance may be a useful adjunct to successful therapy. But let us remind you that no asthmatic or allergic rhinitis patient will get significantly better on allergen avoidance alone. Allergen avoidance is critical if a food allergen is identified as the cause of pathology in the bowel or the skin.

Knowledge of these principles will allow you to provide the second principle of care - Provide a solution!

**THE FINAL BUT MOST IMPORTANT STEP**

Now we get to what you, as the operator of a children's chest and allergy clinic, have to offer to your patients to actually make a difference. And let us say, right at the outset, that this is the most important aspect of your care. It is also, unfortunately, the most time consuming part of your practice. This is where you EDUCATE your patients so that they take responsibility for a solution that actually works. The most important points in patient education are listed in Table VI.

**Table VI.** Components of patient education

Explain the inflammatory nature of the disease and need for regular control (adherence)

Demonstrate and regularly check delivery methods for medication, especially nasal therapy and inhalers (technique)

Use of therapies for co-morbid conditions

Treatment of flares and exacerbations

Monitor control of the disease

Regular check-ups

Avoid known allergens (including hidden sources) and irritants

Avoid unnecessary and unsafe therapies and practices

Provide written material or reputable web addresses for such access

Education is thus time consuming, but is **THE** unavoidable component that must be provided if you wish to successfully translate good therapy into successful therapy.

We cannot over emphasise this component of your successful clinic. It may be wise to employ a nurse practitioner who has the skills and qualifications to do this for you. The National Asthma Education Programme has a number of highly trained individuals with suitable knowledge.

Some tools to aiding education include those listed in Table VII.

**Table VII.** Tools for patient education

Make your waiting rooms educational rich (posters and other catchy displays)

Have a display where patients can freely pick up brochures of interest

Allow your patients to ask questions that they may have

Make sure staff are able to answer questions

Have a range of demonstration devices

Have a medication chart<sup>#</sup>

Provide directed literature after each consultation

Provide reputable web addresses (on your educational material or prescription)

Provide control diaries

Provide contact details for emergencies

<sup>#</sup> See Figure 2 as an example

There is a potentially endless list of factors that may be thought to arise from patients in limiting control of atopic disease. Table VIII lists a few of these. Some are beyond your control but ensure that you do what you must to ensure control, and thereby a normal life for your allergic patient.

**Table VIII.** Patient related factors that may impact on achieving ideal control of atopic conditions

Failure to recognise disease chronicity

Abuse of OTC medications

Non-adherence

Inability to use delivery devices

Fear of adverse events

Cost of treatment

## CONCLUSION

Knowledge of atopic conditions and their management does not guarantee success in therapy. Successful therapy, or a solution that works, requires more than a great medical mind. It requires all the subtleties of a successful educational message. Ensure your reputation is built on getting children to a normal life.

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