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August 2005

EDITORIAL:

ASTHMA GETS THE GREEN LIGHT FOR SALBUTAMOL INHALERS THANKS TO PUBLIC PRESSURE!

SPECIAL FEATURE:
IS THERE A NEED FOR BLOOD TESTS IN ASTHMA?

NEWSTREAM
NEWS FROM AROUND THE WORLD

ATTENTION!
ALL CHILDREN IN AUCKLAND WHO HAVE ASTHMA!

COCKROACHES
NOT JUST UNWELCOME VISITORS – THEY COULD BE CAUSING YOUR ASTHMA SYMPTOMS

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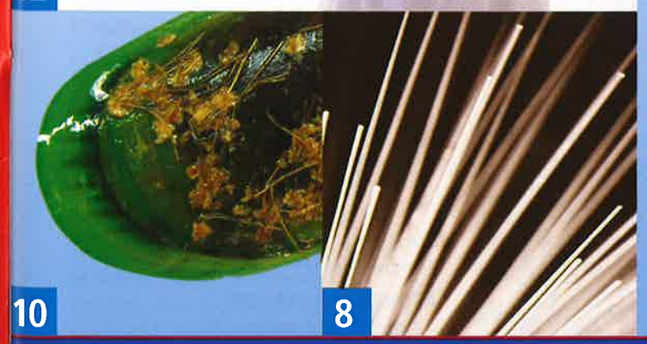

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editorial

ASTHMA GETS THE GREEN LIGHT FOR SULBUTAMOL INHALER!

Public opinion is everything. With public sentiment nothing can fail; without it nothing can succeed.
– Abraham Lincoln

The last month has made me proud to work for people with asthma. When PHARMAC decided to stop funding Ventolin and other salbutamol brands it embarked on an unnecessary process which eventually came back to bite it.

People responded in their thousands through letters, emails and in person to their doctors and pharmacies. Asthma New Zealand was literally inundated with responses. Most alarming were the 700 individual complaints about the alternative Salamol inhaler to the independent body CARM (Centre for Adverse Reactions monitoring) – the largest ever received about one product.

The first thing I want to do is to thank everyone who made the considerable effort required to contact us, PHARMAC and other parties involved to show their universal support for maintaining a choice of salbutamol inhalers. In all my years working with patient support groups I have never seen a stronger and more tenacious group of people and a more committed support organisation.

Secondly, I would like to thank Airflow and the Asthma and Respiratory Foundation for its dubious contribution to patient care. According to its research 60% of the Salamol inhalers that were returned having supposedly blocked were actually working. Thank goodness – only 40% were actually blocked!!!!!!! In addition the majority of the 40% would work again if you gave them a thorough clean. So basically if you have an attack and it blocks, you need to clean it out and dry it thoroughly (hopefully it's a hot day) and then use it (if you are still breathing). Then if it does work you can't drive a car for somewhere between five and twenty minutes in case you give a positive breath test. I'm sorry Airflow – thanks but no thanks!

Thirdly, I'd like to commend the PHARMAC board for eventually doing the right thing but to also recommend a full and broad sweeping review of PHARMAC's policies and its culture. A few years back IRD took a hammering from the public as a culture of dictatorial arrogance, individual persecution and threatening behaviour had developed. Unfortunately the same can be said of 'Fortress PHARMAC' which attacks and threatens anyone brave enough to criticise – ourselves, researchers like Shane Reti, independent data group IMS, journalists, scientific journals and many others.

In this case PHARMAC went as far as to lie about UK usage of Salamol to justify its behaviour and convince people of its safety. In addition, to minimise discontent, notifying everyone with an interest in the changes by fax on Christmas eve two years after the original tender submission and supposed 'consultation' – this is completely unacceptable for a Government organisation.

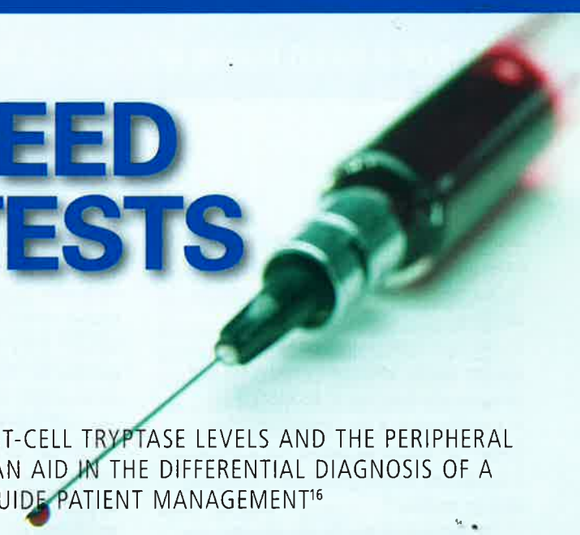
Lastly I would like to offer a reminder to everyone involved: without public support nothing can succeed. It is likely (although it will probably never be confessed) PHARMAC's back down would never have happened if not for public pressure. I hope it means the Government is, for the first time in years, listening to people with asthma. Just in case they are, here is a brief wish list I'd like them to consider:

- Make asthma a health priority objective for New Zealand.
- Openly support the Asthma New Zealand charter for people who have asthma
- Providing free regular assessments of asthma control for everyone with asthma via a GP or other suitably qualified health professional.
- Provide open subsidised access to asthma medicines for all people with asthma.
- Provide funding support for a programme of asthma education for the people who have asthma, with sufficient resources to educate every person with asthma about their condition and how best to manage it.

Gerry Hanna
Executive Director

ASTHMA NEW ZEALAND – THE LUNG ASSOCIATION – HELPING PEOPLE WITH ASTHMA LEAD A BETTER QUALITY OF LIFE

IS THERE A NEED FOR BLOOD TESTS IN ASTHMA?



IMMUNOGLOBULIN CONCENTRATIONS, BLOOD GASES, MAST-CELL TRYPTASE LEVELS AND THE PERIPHERAL EOSINOPHIL COUNT ARE SOME OF THE MEASURES THAT CAN AID IN THE DIFFERENTIAL DIAGNOSIS OF A RANGE OF CONDITIONS AND PROVIDE INFORMATION TO GUIDE PATIENT MANAGEMENT[16]

Worldwide the diagnosis of asthma, like that of many other respiratory diseases, is dependent on the history, physical examination and near-patient tests such as peak expiratory flow determination or spirometry. For most patients, blood tests are unnecessary for diagnosis or for routine monitoring but there are occasions when a blood test is of help.[16]

The New Zealand adult asthma guidelines should be consulted for diagnostic and management recommendations.[1]

So! What can blood tests tell us in people with asthma and related allergic and respiratory disorders? Blood tests are sometimes helpful as an adjunct to the history in distinguishing intrinsic asthma from extrinsic (allergic) asthma and in diagnosing complications such as allergic bronchopulmonary aspergillosis (ABPA).

Blood tests can also be invaluable in the differential diagnosis of those diseases where bronchial constriction is a feature, such as anaphylaxis.

DIFFERENTIAL DIAGNOSIS OF ASTHMA

The differential diagnoses of asthma is shown below. Many of these conditions can be distinguished by clinical features or x ray without resorting to blood tests.[16] But immunoglobulins should, however, always be requested if bronchiectasis is present, because treatment of hypogammaglobulinaemia with immunoglobulin replacement prevents disease progression.[2]

Differential diagnosis of asthma.

- Allergic asthma
- Occupational asthma
- Allergic bronchopulmonary aspergillosis
- Chronic obstructive pulmonary disease.
- Wheeze (e.g. ACE-inhibitor induced)
- Cardiac wheeze –pulmonary oedema
- Large airway obstruction (e.g. foreign body/tumour)
- Pneumothorax
- Pulmonary embolism
- Bronchiectasis
- Bronchiolitis

ACUTE SEVERE ASTHMA

Blood gas measurements are an essential element when assessing the severity of an acute asthma episode. Asthma guidelines recommend they be performed when any life-threatening features are present or when pulse oximetry records oxygen saturations at 92% or less.

Life-threatening features of acute severe asthma

- Peak expiratory flow (PEF) below 33% of predicted or best.
- Silent chest, cyanosis or feeble respiratory effort
- Bradycardia or hypotension
- Exhaustion, confusion or coma

Asthma, atopy and IgE

A blood test is useful to define those people with asthma who are atopic, because treatment strategies can be modified to include allergen prevention/exclusion. Atopy refers to hyperresponsiveness to immunoglobulin E (IgE) and a predisposition to allergic disease such as asthma, eczema or hay fever. In developed countries, 30-40% of individuals are atopic but only a proportion (5-15%) of these have an allergic disease such as asthma. The most efficient allergen test in New Zealand used to discover allergies is the skin prick test. This is supported by Buckland and Longhurst (2002) who tell us skin prick testing or specific IgE determination is necessary to identify the allergic cause.

Total IgE

IgE is difficult to measure because, of all the immunoglobulins, it has the lowest concentration in serum. Sensitive assays are therefore needed to detect it. In any individual, IgE levels are increased by smoking and decline with age.[5]

As up to 70% of people with asthma (depending on the population studied) are allergic in origin and allergic disease is mediated by IgE, total IgE would appear to be the ideal marker for diagnosis and monitoring. But although a significantly elevated IgE is strongly associated with atopy, up to 50% of people with allergic disease have a normal total IgE.

The negative predictive value of this test is therefore poor,[6] because having a normal IgE cannot reliably exclude allergic disease. In addition, total IgE does not correlate with disease severity. Therefore total IgE is not a useful diagnostic or monitoring tool in asthma.

Specific IgE

Buckland and Longhurst (2002) further inform us that when a careful history is suggestive of allergic asthma, the diagnosis should be confirmed by skin-prick testing or specific IgE measurement. Skin prick testing is often preferred, because sensitivity and specificity are similar, results are immediately available and the procedure is inexpensive. We should be aware though that skin prick testing might not be easily available or might be contraindicated – for example if the patient is currently taking

Continued on page 4

... from page 3

antihistamines, or has severe eczema. In such cases it might be appropriate to test serum for the presence of IgE antibodies to specific allergens.

The most common method by which allergen specific IgE is determined is the CAP-radioallergosorbent test (CAP-RAST). This is a modification of the classical RAST test. Specific IgE results are graded 0 to 6, where 0 is negative, 1 is weakly positive and 4-6 is strongly positive.[16]

The presence of specific IgE indicates sensitisation to a particular allergen rather than clinical allergy. Sensitisation does not necessarily result in disease. For this reason, specific IgE results are useful only in the context of a patient history suggesting the possibility of allergy.

Buckland and Longhurst (2002) go on to inform us that if allergy is suspected, and confirmed by specific IgE, it might then be appropriate to try and exclude the allergen from the environment (e.g. house dust mite) or in the case of grass pollen allergy, reduce seasonal exposure and take appropriate medication such as oral antihistamines and inhaled corticosteroids at the peak of the season.[7] Many allergens have cross-reacting epitopes (an immunologically active binding site on an antigen to which an antibody becomes attached), that might be of clinical importance; for example, an individual with birch pollen allergy will often also be allergic to apple, pear or other fresh fruit. An understanding of their sensitivities will allow appropriate advice or reassurance to be given to the patient.

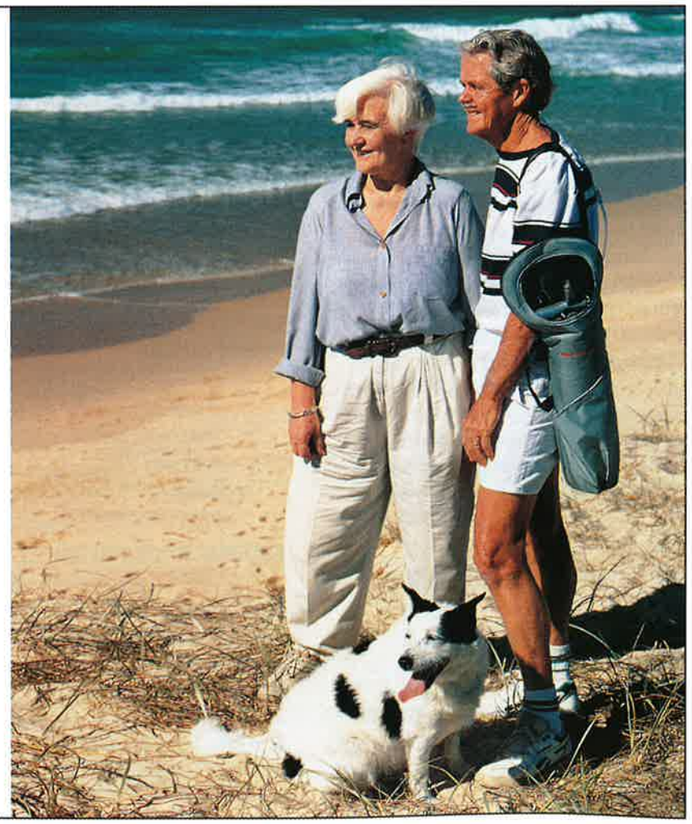
In patients with rhinitis uncontrolled by medication, who have associated mild seasonal asthma to a single allergen, desensitisation may be appropriate. Skin prick tests or specific IgE measurements are indicated to confirm the appropriate allergen for desensitisation and to exclude the presence of multiple sensitivities. Patients who are allergic to multiple inhaled allergens are less likely to respond well to desensitisation.

Allergen-specific immunotherapy (desensitisation) entails giving increasing doses of a relevant antigen with the aim of inducing immunological tolerance.

During immunotherapy a Th1 cytokine profile and immune response is generated that results in production of IgG antibody to the allergen rather than IgE.[8] As a consequence, allergen on exposure is complexed to IgG and unavailable to IgE should fall. Studies of grass-pollen immunotherapy, however, have shown an early rise and subsequent fall, but only to baseline of specific IgE.[9] The patient's clinical response is therefore more important than specific IgE levels in the monitoring of immunotherapy.

Occupational allergens and IgE measurement

Occupational asthma should always be investigated by a physician with experience in occupational allergic disease corroborates Buckland and Longhurst (2002), they go on to say, confirmation of the occupational asthma



is important, because removal of the worker from exposure without a diagnosis would result in unemployment without true occupational disease. Conversely, continued exposure to the allergen is likely to result in worsening symptoms and eventually, irreversible airway disease.

As in non-occupational allergic asthma, causative occupational allergens are highlighted by history taking and should then be confirmed by skin-prick testing or specific IgE measurement. Allergen-specific IgE might be determined to high-molecular-weight allergens that are associated with occupational asthma, such as rodent urinary proteins, flour allergens, natural rubber latex and, less reliably, to several low-molecular-weight antigens such as isocyanates, anhydrides, glutaraldehyde and platinum salts. The serum specific IgE might decline after a period of withdrawal from the allergen[10]. However, progress is most reliably monitored by symptom resolution and serial spirometric measurements.

ASTHMA AND EOSINOPHILS

An elevated peripheral blood eosinophil count (PBEC) is a common association with asthma. The PBEC shows no correlation with disease severity, and is not predictive of the outcome of a given exacerbation[11]. Therefore the eosinophil count has no place in the monitoring of people with asthma.

Differential diagnosis of eosinophilia

- Parasitic infection, including Loeffler's syndrome and tropical pulmonary eosinophilia
- Allergic bronchopulmonary eosinophilia
- Pulmonary vasculitis, e.g. Churg-Strauss syndrome
- Hypereosinophilic syndrome
- Hypoadrenalism
- Lymphoma
- Inflammatory bowel disease

COMPLICATIONS OF ASTHMA

Allergic bronchopulmonary aspergillosis and other aspergillus-related diseases often cause confusion and serological tests are helpful in establishing the diagnosis.

Allergic aspergillus disease

Allergic bronchopulmonary aspergillosis (ABPA) is a complication of pre-existing asthma. The diagnosis should be considered in severe uncontrollable asthma, or those with long-standing asthma who develop persistent sputum production.

Serologically, patients have a high total IgE (above 400 IU/ml) and a persistently elevated PBEC (above $0.5x10^9$/ml). Serum precipitins are often present. ABPA can be differentiated from immune complex disease by the presence of wheeze, high IgE and eosinophilia.

The mainstay of management is control of asthma symptoms with high-dose inhaled corticosteroids and often oral steroids, although there is emerging evidence that in severe cases oral antifungals might be of benefit.[14] Treatment is monitored by improvement in spirometric parameters, rather than serology. Patients on long-term corticosteroids should be monitored for the development of diabetes, mellitus and the use of antifungal drugs such as itraconazole requires regular assessment of liver function.

Aspergillus-mediated immune complex disease

Aspergillus fumigatus can cause disease when patients with normal lungs are exposed to organic dust – for example, when farm workers come into repeated contact with mouldy hay and develop 'farmer's lung'. The disease presents with fever, cough, shortness of breath and weight loss. Wheeze is not a feature, in contrast to ABPA. Serum precipitating antibodies of the IgG class are formed to the major epitopes of *Aspergillus*.

Multiple precipitin lines are characteristic of patients with disease. Management is mainly avoidance of the precipitant, for example, mouldy hay. The serum precipitins do not disappear even many years after clinical remission and are not therefore useful in monitoring.

MONITORING OF THERAPY

Although blood tests are not useful in the monitoring of asthma per se, they are important in the monitoring of theophylline and other systemic treatments.

Theophylline has a narrow therapeutic index and serum concentrations should be monitored. Levels of at least 10mg/l are usually required for therapeutic benefit. Toxicity (convulsions, arrhythmias, gastrointestinal disturbance such as nausea and vomiting) is common at levels above 20mg/l.

CONCLUSION

Blood tests do not have a major part to play in the diagnosis of asthma. However, measurement of blood gases is essential when assessing the severity of acute asthma. Blood tests can also be a useful adjunct to the history in allergic asthma and in diagnosing complications of asthma or in establishing the diagnosis when unusual systemic features are present.

Matthew S. Buckland, MB BS BSc(Hons) MRCP, Specialist Registrar

Hilary J. Longhurst, MB BS, PhD, MRCP, MRCPath, Consultant Immunologist

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HARD CHOICES AND EMOTIONAL ISSUES INVOLVING PETS AND ASTHMA

BY SWARNA HEMACHANDRA

Pets are very important in many people's lives. They provide entertainment, protection, companionship, and affection. People who have never had pets have a difficult time understanding the emotional bond many people form with their pets. Unfortunately, pets appear to be one of the major risk factors for children with asthma. Parents need to consider carefully the risks and benefits of owning a pet, as keeping domestic pets can more than double the risk of asthma in vulnerable children. So think twice before investing in a pet.

For those who have asthma and already have a pet simply telling them to get rid of a beloved pet will only make a difficult situation worse. This can be particularly difficult especially when the pet belongs to the child with asthma. Then again the pet may belong to a family member who does not have asthma, leading to disagreements in the family. The feelings of all family members must be taken into consideration. Other factors, such as the pet's age, are also important. All of the options must be investigated, discussed, and reasonable plans implemented.

We know that dander (skin flakes, fur, saliva, and urine), from dogs, cats, birds, rabbits and horses, are common allergens and asthma triggers, and are carried in the air as very small particles. More than 50% of people with asthma have pets in their homes. Cats produce more severe allergic reactions than dogs. Pets like birds, rabbits, hamsters, guinea pigs, rats and mice can trigger asthma.

Symptoms may occur within minutes of being exposed to the pet. For some people however, symptoms may build up over several hours and be most severe 12 hours after initial contact with the pet. For some people, this may be life threatening.

Actions You Can Take

- First, be sure that the pet is at fault. Allergy testing can decide sensitivity to the pet one way or the other.
- If pets are one of your asthma triggers, strongly consider finding a new home for your pets.
- Pets will leave allergens behind after they have left the room. If you must have a pet, keep it out of your bedroom at all times. Keep your bedroom door closed and put a filter over air vents in the bedroom. If a pet comes inside, its shedding becomes part of the house dust and is present even when the animal is outside.
- Vacuum carpets, rugs and furniture two or more times per week. Vacuuming has little effect on these allergens as it does not reach the lower levels of the carpet where the tiny particles settle. Using a vacuum cleaner with a HEPA filter system may help prevent the release of the allergen, but the best solution is to have polished floors. Remember when using a vacuum cleaner to change the filter often. Mop the hard floor regularly to clean the droppings, dander.
- Have the pet sit on a washable sheet that should be washed daily.
- Keep the pet away from upholstered furniture and carpet, and stuffed toys as much as possible.
- Avoid visits to friends and relatives with pets. Ask your doctor about using an inhaled medication before you visit a home with a pet.
- Choose a pet without fur or feathers. Fish can be good pets.
- The pet should be washed weekly by a non-allergic person. Brush your pet outside regularly.

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New Zealand Consumer Health Information regarding asthma.

http://www.epa.gov/asthma/pets.

http://www.animalworldnetwork.com/bpetandasb.html

ASTHMA

BY JACQUI O'CONNOR

The Burden of Asthma published in 2002 estimates the costs of asthma in New Zealand to be $825 million, proving that the Ministry of Health need to recognise asthma as a priority disorder in the New Zealand Health Strategy. Recommendations which would help include the following:

- Greater availability of cost-effective medications
- Reduction of barriers to adequate primary care
- Innovative programmes to fund regular patient review
- An integrated approach including
  - diagnosis and review
  - provision of asthma medication
  - written plans
  - regular review of asthma medication

Ref: Holt&Beasley. The Burden of Asthma in New Zealand, Asthma and Respiratory Foundation of New Zealand(inc)2002

A recent New Zealand study of 327 asthmatics also indicated 71% were not well controlled, yet of this group 86% considered themselves to be well controlled.

Ref: Holt S etal.BMJ 2001,323:1-8

So, with high prevalence rates and a general acceptance of asthma symptoms, the asthma challenge is to get asthma patients into the surgery to ensure they have a regular review of their treatment.

WHAT IS AN ASTHMA REVIEW?

- Patients asthma severity and symptoms are reviewed
- Their inhaler technique is checked
- Education about asthma and treatment can be provided

WHAT ARE THE BENEFITS?

- The patient achieves improved asthma control

WHERE CAN I GET A REVIEW?

- Some general practices have regular nurse led asthma reviews up and running on a regular basis. Ask your practice nurse.

ASTHMA AUCKLAND IS OPEN FROM 9AM TO 5PM AND PROVIDES FREE EDUCATION.

Ring 630 2293 for an appointment. Preference is given to appointments.

ASTHMA AUCKLAND ALSO RUN:

- COPD Breathing Support Group - For people with chronic breathing problems: e.g. Chronic Asthma, Emphysema, Chronic Bronchitis.
- Wai Health Physiotherapy Clinic - 13-15 Ratanui St Henderson. (Opposite "Pak & Save") 1-3pm on the 1st Thursday of each month. Supervised exercise, tea/coffee, time to socialise, plus interesting speakers.

AstraZeneca (the manufacturers of the Turbuhaler® range of asthma & COPD inhalers) proudly support these initiatives by providing asthma device training and educational resources.

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asthma AUCKLAND

newstream

Welcome to Newstream, in this section Asthma New Zealand – The Lung Association will present abstracts from around the world, which we consider to be interesting and of value to health professionals and the people of New Zealand who have asthma. The pages will be devoted to the very latest information on asthma and its management.

If you discover an article which you think would be of interest to our readers or to your colleagues contact Janette Reid ph 09 623 0236 or email at janetter@asthma-nz.org.nz

Medscape Medical News

Laughter May Trigger Asthma Attacks

Medscape Medical News 2005. © 2005 Medscape
Linda Little

More than half of patients with asthma can have an attack triggered by laughter. New York researchers reported here at the 2005 American Thoracic Society International Conference.

Fifty-eight percent of patients reported that laughter was a trigger for an asthma attack, making it a common trigger, said Stuart Garay, MD, clinical professor of medicine, New York University Medical Centre in New York. "This occurs more commonly than most doctors appreciate".

"Doctors need to make their patients aware of this," agreed Andrew Ries, MD, professor of medicine, family and preventive medicine, University of California San Diego. "Most general practitioners know about exercise-induced asthma, but never think about laughter."

"It is interesting," Dr Ries said, commenting on the study. "More than likely it is a local effect on the airways. It probably involves movement in the airways as well as an emotional reaction."

New York University Medical Centre researchers did a subgroup analysis on triggers for asthma in a group of 235 patients who had enrolled in a disease-management programme for 18 months ending in October 2003.

During the initial evaluation, a list of asthma triggers was compiled for all patients. Patients were divided into two groups, including the 132 patients with laughter-induced asthma and the 103 without laughter induced asthma. Patients were assessed for other asthma triggers, disease severity, and clinical course, such as emergency department visits and hospitalisations.

Between the two patient groups, there were no other differences in asthma triggers, such as grasses, pollen, cold air, dust mites, animal dander, mould, alcohol, food, reflux, and stress. Nor was there any statistical difference in age, asthma duration, or family history.

Researchers also found that the clinical course of both groups of patients was similar with both groups having a similar number of visits to the emergency department or hospitalisations. Disease severity among the asthma patients also did not correlate with laughter-induced asthma, the researchers reported.

But the researchers did discover that exercise-induced asthma was more frequent in patients with laughter-induced asthma, with 61% also having exercise-induced asthma, while only 35% of those without laughter-induced asthma had exercise as a trigger.

Primary symptoms of laughter-induced asthma were cough, chest tightness, and shortness of breath, Dr Garay said "it did not matter whether it was a giggle, chuckle, or belly laugh."

A total of 53% of patients who had their asthma well controlled still had laughter-induced asthma, Dr Garay said.

The fact that the only correlation was with exercise may indicate that a shared physiologic mechanism could.

Strength Exercise Improves Quality of Life in COPD Patients

Strength exercise appears to improve health-related quality of life (HRQL) in COPD patients more than endurance exercise does, according to the findings of a new study.

"Physical exercise is an important component of respiratory rehabilitation because it reverses skeletal muscle dysfunction, a clinically important manifestation of COPD associated with reduced HRQL and survival," Dr Milo A. Puhan, of University Hospital of Zurich, and colleagues write in the May issue of Thorax. "However, there is controversy regarding the components of the optimal exercise protocol".

To investigate, the researchers reviewed 15 randomised control trials that compared at least two different exercise protocols for patients with COPD. The methodological quality of the included studies was low to moderate.

Compared with endurance exercise, strength exercise resulted in greater improvements of HRQL.

Interval exercise appeared to be as effective as continuous exercise. One small trial comparing high-intensity and low-intensity exercise (at 80% and 40% of the maximum exercise capacity, respectively) in patients with mild COPD showed that high-intensity exercise yielded greater physiological training effects.

"Strength exercise should be routinely incorporated in respiratory rehabilitation, " the researchers conclude.

"More research is needed to assess the relative benefits and disadvantages of interval exercise compared with continuous exercise and to define optimal exercise intensity for patients with COPD," Dr Puhan's group suggests.

Thorax 2005;60:367-375.

Young Women Have High Incidence of Adult-Onset Asthma

Medscape Medical News 2005 © 2005 Medscape.
Linda Little

May 27, 2005 (San Diego) – Younger women have the highest incidence of adult-onset asthma, Swedish researchers reported at the 2005 American Thoracic Society International Conference.

" Young women had the highest risk of developing asthma," said Lars Larsson MD, PhD, associate professor of respiratory medicine, University of Ostersund, Ostersund, Sweden. "We are not sure why young women have higher rates of asthma. However, we do know they smoked more than the other groups".

"This is an important issue," said J. Randall Curtis, MD, ATS international program chairman. "This is the first study to identify young women as being at highest risk for adult-onset asthma".

While other studies have documented a rise in the number of asthma cases, this population-based study clearly identifies young women as being at higher risk, Dr Curtis said.

When teenaged girls were surveyed in 1990, only 6% had asthma, but that number dramatically increased 13 years later when 17% of the same young women reported having asthma, Dr Larsson said. The next highest rate of asthma was found in young men who initially had a 6% incidence, but more than a decade later had a 13.5% incidence.

Swedish researchers did a survey of more than 11,000 individuals in 1990 that questioned teenaged (16 year old), middle-aged (30-39 year old), and elderly (60-69 year old) individuals about any respiratory tract symptoms. Then, 13 years later, a second survey was taken of the same group, with 8,000 individuals responding.

"We received responses from about 73% of the initial group," Dr Larsson said. "The 16-year-old respondents were now adults and about 29 years of age.

While the incidence in middle-aged and older Swedish people increased, it was not as dramatic as younger aged adults. The incidence of asthma in middle-aged adults increased from about 5% in the 1990 survey to 10.5% in the 2003 survey; the elderly individuals' incidence increased from 5.6% to 10%.

The cumulative incidence of developing asthma was 8.3% in women and 5.9% in men, Dr Larsson said.

If there was asthma in another family member, individuals had three times the risk of developing asthma compared with others. But if they were young, they had twice the risk of developing asthma compared with older adults. Women had 1.2 times the risk of developing asthma than men.

Other risk factors included obesity, which placed individuals at 1.5 times the risk, and smoking, which posed a 1.2 times risk than that of non-smokers.

The prevalence of smoking was 19% in women and 15% in men, Dr Larsson said. "Being overweight and smoking were big risk factors".

Dr Larsson said he is unsure why young women were more apt to develop asthma than other Swedish adults but that smoking and weight may have contributed to the high incidence. "The message might be to not smoke and stay thin," Dr Larsson said.

2005 ATS International Conference: Poste 507. Presented May 23 2005.
Reviewed by Gary D. Vogin MD
Linda Little is a freelance writer for Medscape.

AN APOLOGY...

In the April 2005 issue of the journal O2, the article entitled Preventing Asthma and Allergies had incorrectly stated that it was written by Marli Merhoye. It was written by Cathy Modrich and edited by Marli Merhoye.

ATTENTION!

ALL CHILDREN IN AUCKLAND WHO HAVE ASTHMA!

Is your child between 6–13 years? Does your child have asthma? Do you live in the Auckland area? If you answer yes to these three questions please contact Asthma New Zealand-the Lung Association.

Why?

Because Asthma New Zealand needs volunteers to participate in a study which is looking at the benefits to children who have asthma from taking a natural product, made from a marine substance. As the product contains no protein it is safe for those who have a shell fish and/or fish allergy.

Taking part in this study may help reduce the participant's use of asthma medication and the knowledge gained may help other children with asthma gain better control of their asthma.

The only known side effect of taking this natural product is a very rare slight itching. Allergic reactions are therefore not anticipated.

The study is a double blind, randomised controlled trial in children with chronic obstructive asthma and will be conducted in compliance with the protocol, Interim Good Clinical Research Practice Guidelines (Medsafe, 1998) and the regulatory requirements of New Zealand. We require children who are between 6 and 13 years of age, with proven chronic obstructive asthma.

The diagnosis of asthma will be according to standard guidelines accepted by National Asthma Council of Australia. The children must be able to swallow capsules in order to participate, as there is no alternative form of study medication. The child's parent or guardian will provide written Informed Consent before enrolling the child in the trial. Where possible (given the child's age) the child's consent will also be obtained.

If you are interested in enrolling in the study or want to know more please contact Rochelle at Asthma New Zealand-the Lung Association at ph 09 623 0236, or email aas@asthma-nz.org.nz.

Source: American Academy of Allergy, Asthma and Immunology.

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British Guideline on the Management of Asthma

Section 7: Asthma in pregnancy

In 2002 the New Zealand Guidelines Group released the adult version of Asthma Guidelines. The Paediatric version will be released soon. Both sets of guidelines are based on the British Guidelines on the Management of Asthma 2002 which was produced jointly by the Scottish Intercollegiate Guideline Network (SIGN) and the British Thoracic Society. The New Zealand Guidelines have been adapted for New Zealand. This is good news for health professionals in New Zealand, as we now have guidelines that are culturally safe and for the people of New Zealand, except for one missing section 'Guidelines on the Management of Asthma during pregnancy.' This area of asthma management has been ignored by both groups.

Since both the adult and paediatric guidelines have used on the SIGN guidelines on asthma as the reference document, Asthma New Zealand would like to provide health professionals with a copy of the 'Management of Asthma During Pregnancy' for future reference.

7.1 Natural history

Several physiological changes occur during pregnancy that could worsen or improve asthma, but it is not clear which, if any, are important in determining the course of asthma during pregnancy. Pregnancy can affect the course of asthma and asthma can affect pregnancy outcomes.

The natural history of asthma during pregnancy is extremely variable. In a prospective cohort study of 366 pregnancies in 330 asthmatic women, asthma worsened during pregnancy in 35%.[316] US studies suggest that 11-18% of pregnant women with asthma will have at least one emergency department visit for acute asthma and of these 62% will require hospitalisation.[317, 318] There is also some evidence that the course of asthma is similar in successive pregnancies.[316] Severe asthma is more likely to worsen during pregnancy than mild asthma,[316] but some patients with very severe asthma may experience improvement, whilst symptoms may deteriorate in some patients with mild asthma. *Evidence level 2-,2+*

Offer prepregnancy counselling to women with asthma regarding the importance and safety of continuing their asthma medications during pregnancy to ensure good asthma control.

The conclusions of a meta-analysis of 14 studies is in agreement with the commonly quoted generalisation that during pregnancy about one third of asthma patients experience an improvement in their asthma, one third experience a worsening of symptoms, and one third remain the same.[319] *Evidence level 2++*

In a large cohort study, the most severe symptoms were experienced by patients between the 24th and 36th week of pregnancy. Thereafter symptoms decreased significantly in the last four weeks and 90% had no asthma symptoms during labour or delivery. Of those who did, only two patients required anything more than inhaled bronchodilators.[316] A further study has confirmed the observation that the last month of pregnancy is the one in which patients are least likely to have an asthma exacerbation.[320] *Evidence level 2-, 2+*

A cohort study comparing 198 pregnant women with asthma to 198 women without asthma reported that non-atopic patients with asthma tend to have more severe asthma.

Pre-eclampsia was also more common in this group. However with adequate surveillance and treatment, pregnancy and delivery complications can be avoided.[321] A systematic review has shown that baseline asthma severity does determine what happens to the course of asthma in pregnancy and asthma may affect the risk of adverse outcomes.[322] *Evidence level 2+, 2++*

Monitor pregnant women with asthma closely so that any change in course can be matched with an appropriate change in treatment.

Uncontrolled asthma is associated with many maternal and foetal complications, including hyperemesis, hypertension, pre-eclampsia, vaginal haemorrhage, complicated labour, intrauterine growth restriction, preterm birth, increased perinatal mortality, and neonatal hypoxia.[323, 324, 325, 326] A large Swedish population-based study using record linkage data demonstrated increased risks for preterm birth, low birth weight, perinatal mortality and pre-eclampsia in women with asthma. The risks for prematurity and low birth weight were higher in women with more severe asthma necessitating admission.[327] *Evidence level 2+*

In contrast, if asthma is well controlled throughout pregnancy there is little or no increased risk of adverse maternal or foetal complications.[317, 318] Pregnancy should therefore be an indication to optimise therapy and maximise lung function in order to reduce the risk of acute exacerbation. *Evidence level 2+*

Advise women who smoke about the dangers for themselves and their babies and give appropriate support to stop smoking.

7.2 Management of acute asthma in pregnancy

The management of acute asthma in pregnancy may be affected by concerns about harmful effects of medication on the foetus. In a prospective controlled study of 51 pregnant women and 500 non-pregnant women presenting with acute asthma to an emergency department in Boston, USA, pregnant patients with asthma were less likely to receive appropriate treatment with steroids and, as a result, were more likely to experience ongoing exacerbation at two weeks.[328] Available studies give little cause for concern regarding treatment side effects (see section 7.3) and the maternal and foetal risks of uncontrolled asthma are much greater than the risks from using conventional asthma medications for management of acute asthma. In the last two confidential enquiries into maternal deaths in the UK (covering 1994-1999) there were eight deaths from asthma.[329, 330] *Evidence level 2+*

Oxygen should be delivered to maintain saturation above 95% in order to prevent maternal and foetal hypoxia. Drug therapy should be given as for a non-pregnant patient with acute asthma, including repeated doses of inhaled beta2 agonists and early administration of steroid tablets.[316, 318, 320, 323, 324] In severe cases, intravenous aminophylline or intravenous beta2 agonists can be used as indicated. Continuous foetal monitoring should be performed when asthma is uncontrolled or severe, or when foetal assessment on admission is not reassuring. *Evidence level 2+*

- **Give drug therapy for acute asthma as for the non-pregnant patient.**
- **Deliver oxygen immediately to maintain saturation above 95%.**
- **Acute severe asthma in pregnancy is an emergency and should be treated vigorously in hospital.**
- **Continuous foetal monitoring is recommended for severe acute asthma.**
- **For women with poorly controlled asthma during pregnancy there should be close liaison between the respiratory physician and obstetrician.**

7.3 Drug therapy in pregnancy

In general, the medicines used to treat asthma are safe in pregnancy.[331] The risk of harm to the foetus from severe or chronically under-treated asthma outweighs any small risk from the medications used to control asthma. *Evidence level 2+*

7.3.1 BETA2 AGONISTS

No significant association has been demonstrated between major congenital malformations or adverse perinatal outcome and exposure to beta2 agonists.[331, 332] A prospective study of 259 pregnant patients with asthma who were using bronchodilators compared with 101 pregnant patients with asthma who were not, and 295 control subjects, found no differences in perinatal mortality, congenital abnormalities, prematurity, mean birth weight, apgar scores or labour/delivery complications.[333] Evidence from prescription event monitoring suggests that salmeterol is also safe in pregnancy.[334] *Evidence level 2+, 3*

Use beta2 agonists as normal during pregnancy.

7.3.2 INHALED STEROIDS

No significant association has been demonstrated between major congenital malformations or adverse perinatal outcome and exposure to inhaled steroids.[331, 335, 336, 337, 338] Inhaled anti-inflammatory treatment has been shown to decrease the risk of an acute attack of asthma in pregnancy[320] and the risk of readmission following asthma exacerbation.[318] *Evidence level 2-, 2+, 2++*

Use inhaled steroids as normal during pregnancy.

7.3.3 THEOPHYLLINES

No significant association has been demonstrated between major congenital malformations or adverse perinatal outcome and exposure to methylxanthines.[331, 339] *Evidence level 2+, 4*

For women requiring therapeutic levels of theophylline to maintain asthma control, measurement of theophylline levels is recommended. Since protein binding decreases in pregnancy, resulting in increased free drug levels, a lower therapeutic range is probably appropriate.[340] *Evidence level 2+, 4*

Use oral and intravenous theophyllines as normal during pregnancy.

Check blood levels of theophylline in acute severe asthma and in those critically dependent on therapeutic theophylline levels.

7.3.4 STEROID TABLETS

The balance of evidence suggests that steroid tablets are not teratogenic.[323, 331, 341] Data from many studies have failed to demonstrate an association between first trimester exposure to steroid tablets and oral clefts.[341] Although one meta-analysis found an increased risk,[342] a prospective study by the same group found no difference in the rate of major birth defects in prednisolone-exposed and control babies.[342] One case control study that may have influenced the findings of the meta-analysis found a significant association between exposure to steroids in the first trimester and an increased risk of cleft lip,[343] although this increase is not significant if only paired controls are considered. *Evidence level 2+, 2-*

Even if the association is real, the benefit to the mother and the foetus of steroids for treating a life-threatening disease justify their use in pregnancy.[323] Pregnant women with acute asthma exacerbation are less likely to be treated with steroid tablets than non-pregnant women.[328] This failure to administer steroid tablets when indicated increases the risk of ongoing exacerbation and therefore the risks to the mother and her foetus. *Evidence level 2+*

Some studies have found an association between steroid tablet use and pregnancy-induced hypertension or pre-eclampsia and preterm labour,[321] but severe asthma may be a confounding variable. *Evidence level 2+*

Continued on page 14

... from page 13

Use steroid tablets as normal when indicated during pregnancy for severe asthma. Steroid tablets should never be withheld because of pregnancy.

7.3.5 LEUKOTRIENE RECEPTOR ANTAGONISTS

Data regarding the safety of leukotriene antagonists in pregnancy are extremely limited. Animal studies and post-marketing surveillance for zafirlukast and montelukast are reassuring. There are animal data of concern for zileuton.[344]
Evidence level 4

Do not commence leukotriene antagonists during pregnancy. They may be continued in women who have demonstrated significant improvement in asthma control with these agents prior to pregnancy not achievable with other medications.

7.4 Management during labour

Acute attacks of asthma are very rare in labour due to endogenous steroid production. In women receiving steroid tablets there is a theoretical risk of maternal hypothalamic-pituitary-adrenal axis suppression. Women with asthma may safely use all forms of pain relief in labour.

In some studies there is an association between asthma and an increased caesarean section rate,[321, 345, 346] but this may be due to planned caesarean sections[320] or inductions of labour rather than due to any direct effect of asthma on intrapartum indications.
Evidence level 2+

Data suggest that the risk of postpartum exacerbation of asthma is increased in women having caesarean sections.[345] This may relate to the severity of their asthma rather than to the caesarean section, or to factors such as postoperative pain with diaphragmatic splinting, hypoventilation and atelectasis. Prostaglandin E2 may safely be used for labour inductions.[340] Prostaglandin F2alpha (carboprost/hemobate®) used to treat postpartum haemorrhage due to uterine atony may cause bronchospasm.[340] Although ergometrine may cause bronchospasm particularly in association with general anaesthesia,[340] this is not a problem encountered when syntometrine (syntocinon/ergometrine) is used for postpartum haemorrhage prophylaxis.
Evidence level 2-, 3

Although suppression of the foetal hypothalamic-pituitary-adrenal axis is a theoretical possibility with maternal systemic steroid therapy, there is no evidence from clinical practice or the literature to support this.[347]

- **Advise women that acute asthma is rare in labour.**
- **Advise women to continue their usual asthma medications in labour.**
- **In the absence of acute severe asthma, reserve caesarean section for the usual obstetric indications.**
- **If anaesthesia is required, regional blockade is preferable to general anaesthesia in women with asthma.**
- **Women receiving steroid tablets at a dose exceeding prednisolone 7.5 mg per day for more than two weeks prior to delivery should receive parenteral hydrocortisone 100 mg 6-8 hourly during labour.**
- **Use prostaglandin F2alpha with extreme caution in women with asthma because of the risk of inducing bronchoconstriction.**
- **Encourage women with asthma to breast feed.**
- **Use asthma medications as normal during lactation, in line with manufacturer's recommendations.**

Last modified 21/4/04

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COCKROACHES

Not just unwelcome visitors

– they could be causing your asthma symptoms

by Richard Thorogood

Many people say they are "allergic" to cockroaches because they dislike them so much. Unfortunately, you really can suffer from allergy to those pesky anathemas of good housekeeping.

The association between cockroaches and asthma was recorded over forty years ago, when it was found that many people with asthma living in urban areas had allergy to cockroach[1]. The link between cockroach allergy and asthma was later confirmed by use of bronchial provocation tests[2] and the demonstration of cockroach-derived allergens in the air of inner city apartments[3].

Subsequent clinical studies have underlined the importance of allergy to cockroach as a risk factor for asthma and rhinitis, including one study that found 37% of American city-dwelling children with asthma had allergy to cockroach and those who lived in homes with high levels of cockroach allergen had more than three times the number of hospitalisations for asthma compared to the rest of the group[4].

Exposure to Cockroach Allergen

The allergenic proteins of the cockroach are found in the "frass" (faeces, secretions, egg cases and body parts) which accumulates at sites of cockroach habitation. When disturbed, the allergens become airborne and can be inhaled. Highest concentrations of allergen are generally found in the kitchen where the cockroach finds food and warmth, although high levels can also be found in the bedrooms of heavily infested homes. A British study demonstrated that exposure to cockroach allergen can also occur at school. They found significant levels in 65% of school classrooms tested[5].

Cockroach Control

Cockroaches in the home can often go undetected since they generally remain hidden from sight during the day, coming out to feed at night. If the presence of cockroaches is suspected and particularly if a family member has cockroach allergy, place adhesive traps that contain an attractant ("Cockroach Motels") in the kitchen to provide conclusive proof of their existence.

If you do find cockroaches, it pays to begin eradication as quickly as possible as populations can escalate rapidly. Begin by rigorously cleaning the kitchen and ensuring that food crumbs and scraps are not left out overnight. Then contact a pest control operative confirming that they are registered with The Pest Management Association of NZ (if in doubt, phone 0800 476 269). The treatment of cockroach infestations has become a lot more asthma-friendly in recent years with gel-based poisonous baits being used in preference to toxic sprays.

Your doctor can generally diagnose allergy to cockroach by means of skin prick tests and the 'RAST' blood test. The most important factor underlying allergic conditions such as asthma and rhinitis, is exposure to allergens. When avoidance is possible, whether it be by fitting allergen barrier bedding covers as protection from dust mite allergens or by ridding your house of cockroaches, avoidance of allergen is an important, common sense step to controlling allergies.

Cockroaches and their Allergens

In common with Europe and North America, the species of cockroach most frequently found in Auckland domestic infestations is the "German" cockroach (Blattella germanica), although the larger "American" cockroach (Periplaneta americana) is not uncommon in inner city dwellings and is the species most likely to be found when you lift a drain 'manhole' cover.

A relative newcomer, the "Gisbome" cockroach (Drymaplaneta semivitta) which, despite its common name is a native of Australia, has spread through most of the North Island since its introduction. This is a relatively large, black cockroach but in common with the true New Zealand native species it generally lives outdoors but may be brought inside on firewood or may shelter indoors during particularly wet weather.

A number of potent allergens have been identified from both the "German" and "American" cockroaches including Bla g 1 / Per a 1 (cross-reactive), Bla g 2, Bla g 4, Bla g 5 and Bla g 7 / Per a 7 (tropomyosin)[6]. Bla g 2 has been identified as an inactive form of aspartic proteinase, a digestive enzyme, suggesting that the faeces may be the major source of this allergen[7]. The allergen designated Bla g 7 in the "German" cockroach and Per a 7 in the "American cockroach" has been identified as the protein tropomyosin. This is a highly conserved protein, found with remarkably few structural differences in a broad range of insects and shellfish and has been proposed as a "pan allergen", possibly responsible for cross reactive allergic reactions between shellfish and cockroach[8].

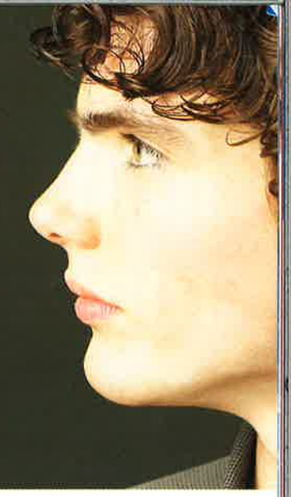
Identification, purification and in some cases production by molecular cloning techniques of cockroach allergens has allowed the development of sensitive tests for the presence of cockroach allergen. These are valuable tools that help us understand the role cockroaches play as sources of domestic environmental allergen. But, at the end of the day the most important message for the person with allergy to cockroach is ... if you see a cockroach in your home, ring the pest exterminator!

Images courtesy of www.insectimages.org

"German" cockroach Blattella germanica

"American" cockroach Periplaneta americana

Budesonide/Formoterol may be effective for maintenance and acute relief of asthma.



NEWS AUTHOR: LAURIE BARCLAY, MD. CME AUTHOR: CHARLES VEGA, MD, FAAFP

Budesonide/formoterol (bud/form) or (Symbicort) as maintenance and as needed for asthma is better than using the more standard maintenance with a short-acting _2-agonist (SABA) as needed or increasing just budesonide (Pulmicort) with SABA as needed, according to the results of a randomised trial published in the Jan. 15 issue of the *American Journal of Respiratory & Critical Care Medicine*.

"Our study is the first to show that a high maintenance dose of the ICS [inhaled corticosteroids] budesonide is not necessary to reduce the incidence of first and repeated severe exacerbations requiring medical intervention," lead author Paul M. O'Byrne, MD, from the Firestone Institute for Respiratory Health at St. Joseph's Hospital in Hamilton, Ontario, Canada, says in a news release. "The risk of severe exacerbations requiring medical intervention was reduced by 45% with bud/form (Symbicort) maintenance and relief compared with patients using a fourfold higher maintenance dose of budesonide with a short-acting _2-agonist for relief. Moreover, the time to second and third exacerbations was significantly prolonged with bud/form for maintenance and relief."

In this double-blind, parallel-group study, 2,760 patients with asthma were randomised to receive one of the following treatments: (1) bud/form, 80/4.5 µg, plus terbutaline, 0.4 mg, as SABA, twice a day (bud/form plus SABA), (2) budesonide, 320 µg, plus terbutaline, 0.4 mg, twice a day (budesonide plus SABA), or (3) bud/form, 80/4.5 µg, twice a day with inhalations of bud/form as needed (bud/form maintenance plus relief). Age range was 4 to 80 years, and baseline forced expiratory volume in one second (FEV_1) was 60% to 100% predicted. Children used a once nightly maintenance dose.

In the bud/form maintenance plus relief group, time to first severe exacerbation was prolonged ($P < .001$), resulting in a 45% to 47% lower exacerbation risk compared with the bud/form plus SABA group (hazard ratio, 0.55; 95% confidence interval [CI], 0.44-0.67) or with the budesonide plus SABA group (hazard ratio, 0.53; 95% CI, 0.43-0.65).

In the bud/form maintenance plus relief group, the time to the first, second, and third exacerbation requiring medical intervention was also prolonged ($P < .001$). Compared with both fixed-dosing regimens, this group also had a lower rate of severe exacerbations and improved symptoms, awakenings, and lung function. More than half of the days in this group were free of reliever use.

"Importantly, there was no evidence of tolerance to medication in patients using bud/form for maintenance and relief, as improvements in exacerbation control, lung function, awakenings, and reliever-free days were maintained over the 12-month study period," said Dr. O'Byrne.

Some of the authors report various financial arrangements with AstraZeneca, maker of budesonide; Altana; GlaxoSmithKline; Topigen; Bristol-Myers Squibb; Hoffman le Roche; Merck; Dynavax; Ono; Aerocrine; Novartis, maker of formoterol and terbutaline; Boehringer Ingelheim; and/or Yamanouchi. One of the authors is an employee of AstraZeneca Sweden and has a pending patent on the as needed use of bud/form in asthma.

American Journal Respiratory Criicalt Care Med. 2005;171:129-136

Allergen nomenclature explained

The names given to specific allergens can seem rather confusing to the uninitiated but with a little understanding they do make a great deal of sense. The letters at the beginning of the names come from the genus and species of the organism that the allergen is from. Hence Bla g is an allergen from the "German" cockroach Blattella germanica. Similarly Der p is an allergen from the house dust mite Dermatophagoides pteronyssinus. The numbers, which were originally and still are sometimes seen as Roman numerals, designate the chronological order in which the allergens were identified. Hence Bla g 1 was identified before Bla g 2.

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Is skin prick testing important in the management of asthma?

COMPILED BY ANN WHEAT

For people with atopic asthma, there are many different allergens which can trigger an acute asthma episode. Some of these are inhaled and some ingested. Fortunately many allergens can be identified using skin prick testing. Recognising and controlling exposure to whichever allergen you react to is an important aim in the management of asthma.

This is supported by Martin and Crane (2002) who state that "identification of the allergic status of patients with asthma by skin prick testing is simple, inexpensive and non invasive, and can provide useful prognostic and management information". Testing for allergens is therefore highly recommended by Asthma New Zealand.

Who can have a skin prick test?

The best age to have a skin prick test is from the age of four or five upwards. In the very young and the elderly, skin prick testing is not as reliable because all who are in this age group should have this simple and convenient test for allergens by skin prick testing (SPT).

Why is skin prick testing of use?

People who are allergic to various substances, produce an antibody called immunoglobulin E (IgE) to that allergen. These are specific to each allergen and when that allergen is introduced into the body the antibody recognises the specific allergen and produces an allergic reaction by the release of chemicals including histamine. The cells that contain the antibody and recognise the specific allergen are called mast cells and these cells are found underneath the lining of the air ways, gut, skin, nose and eyes.

What allergens can be tested for?

The most common inhaled allergens that can be tested for in New Zealand include; house dust mites (D. farinae and D. pteronyssinus), cat hair, dog hair, mixed grass pollens, alternaria, perennial rye, plantain, aspergillus and birch. Other allergens that can be tested for are: milk, soya bean, egg white, peanut, wheat, cashews, shrimp and cod fish.

How is skin prick testing done?

The most common place for SPT is on the inner aspect of the forearm. The arm is cleaned and then a drop of specific allergen is placed on the forearm. Each drop is numbered. A lancet is then used to prick through the centre of the drop of allergen, thus allowing a tiny amount of allergen to enter through the surface of the skin. A fresh lancet is used for each and every allergen to be tested. The excess allergen is then removed from the skin. If you are allergic the mast cells under the skin release histamine and a small lump, much like a mosquito bite, appears at the site of the skin prick within the space of 15 minutes. This lump is then measured and the size of the reaction indicates the level of allergy, for example, the greater the size, the more likely a person is to have a severe reaction.

To ensure that the test results are true, a positive and negative control is undertaken.

Usually a minimum of 10 allergens are undertaken with a maximum of 18 depending on each doctor's request.

Preparation for Skin Prick Testing

Some medications need to be stopped three to five days prior to SPT. These include antihistamines or drugs with antihistamine like actions such as some cold medicines and tricyclic antidepressants as these may interfere with the results. It is also important to avoid creams and moisturisers on the forearms for a similar period as this could allow the allergens to run together (Allergy Capitol, 2005).

Interpretation

as per Gill, M., Ockleford, P., Morris, A., Bierre, T. & Kyle, C., (2000)

- A positive result does not always mean the patient will suffer an allergic illness when exposed to that allergen.
- A negative result does not entirely exclude sensitivity – these false negatives are more common in children under the age of 5.
- The food tests are the least reliable – a negative result does not exclude sensitivity.
- The mould mixture can give false negatives as it is not possible to include the full range of allergic moulds in the mixture.
- Privet is often blamed for allergies but positive tests are uncommon. More often grass pollen is the cause of "privet allergy".
- If all results are positive, including the negative control, the patient has dermatographism which is not due to allergy.
- If the positive control (histamine) is negative, the patient is probably taking antihistamines.
- If all tests are negative (except the positive control), the patient is unlikely to have atopic disease

Is there a better time to have SPT?

Due to the circadian rhythm in the size of the skin prick reactions to allergens and histamine, the best time to do skin prick tests is in the morning before 1 p.m., (Isaac Study, n.d.), but due to children being at school, they are often undertaken up to 3.30 p.m.

Finally SPT is very safe with very few major reactions (Martin & Crane, 2002), with only some itchiness at the lump site and slight discomfort with the prick itself (Isaac Study, n.d.). It is therefore advisable for the best management of asthma, to find out what allergens you may have.

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North & South

NEWS FROM AROUND THE REGIONS

THE NATIONAL BREATHE EASY FAMILY FUN RUN

So what are you doing on Sunday 13th November at 9am? Having a lie in, reading the Sunday paper? I don't think so! This year the 24th Breathe Easy Family Fun Run will take place at Tahaki Reserve in Mt Eden on Sunday 13th November.

The start time is 9am which is earlier than in previous years, but which should make it cooler for all you runners out there! As many of you know, the run has previously taken place at Cox's Bay in Ponsonby but this year we thought we would try something a little different, and bring it to our locality of Mt Eden. We have been overwhelmed with the support that the local community has already given us, and in particular Rotary Mt Eden, Mt Eden Village Mainstreet and Business Association and The Maungawhau Advisory Board are to be warmly thanked. For those of you who aren't familiar with the venue then Tahaki reserve must be one of the unsung beauty spots of Auckland, nestled at the base of Maungawhau itself. The Fun run will cater for the serious runner and the social runner. So if you aren't a serious runner don't panic and arrange to visit friends out of town on that day, bring them along, walk the dog, push the pram, stop off in Mt Eden for a coffee, but most importantly come and have a fun day out with us.

This year we are having two runs, The Challenge which takes participants to the summit of Maungawhau and through Mt Eden Village and the leafy Epsom streets and is for those serious types and then we have another route called the Fitness Trail, which is a gentler stroll and absolutely doesn't include a trip up the Mountain and back! The emphasis this year is on Fun, and we want teams, families, friends, and neighbours to come along, enjoy some exercise and then celebrate Breathing Easy at Tahaki Reserve. We will have entertainment, goodies, prizes, as well as nurse educators on hand to answer any questions you might have. Already we have some really exciting prizes, so thank you to Maui Motor homes for a long weekend away in a camper van, and to Pumpkin Patch and Westfield St Lukes, and Club Physical, to name but a few. This year all funds raised will go towards educating children to take control of their asthma.

If you would like to volunteer to be a marshal on the day, man a water station, help with lost children or any number of the 101 things that we need help with, then please contact me on samantham@asthma-nz.org.nz. Alternatively would you or your company like to donate a prize; or help sponsor the event? Again contact me on my email address.

We are also delighted this year that we can make the Breathe Easy Fun Run a national event with Christchurch, Timaru and Wellington all holding a Run this year. Watch this space for more details.

TIMARU

Things are getting really exciting in Timaru. Their run will be on Sunday 13th November at the Phar Lap Raceway, and many thanks to the Trustees of the raceway for donating the use of the raceway. The theme of their run is "Going to the Races with Breathe Easy Asthma" and although not everyt hing is confirmed yet, watch out for some celebrity running races! If you want any more information on the Timaru run then contact Rosalene on rosespenc@timaru.com

Migrant Expo

The 2nd Migrant Health Expo was held on the 21st and 22nd of May 2005 at Alexander Park Convention Centre, Greenlane.

Asthma Auckland was one of the participants at the Health Expo. Marli, Swarna, Claire and Ann provided education, advice and support to persons with asthma, and their family over the two days. The asthma table was set up with a variety of written information, posters and teaching aids. Also available for demonstration were devices and spacers. Peak flow testing was also available.

A busy and enjoyable day.

Influence of cigarette smoking on inhaled corticosteriod treatment in mild asthma

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Background:

Although inhaled corticosteroids have an established role in the treatment of asthma, studies have tended to concentrate on non-smokers and little is known about the possible effect of cigarette smoking on the efficacy of treatment with inhaled steroids in asthma. A study was undertaken to investigate the effect of active cigarette smoking on responses to treatment with inhaled corticosteroids in patients with mild asthma.

Methods:

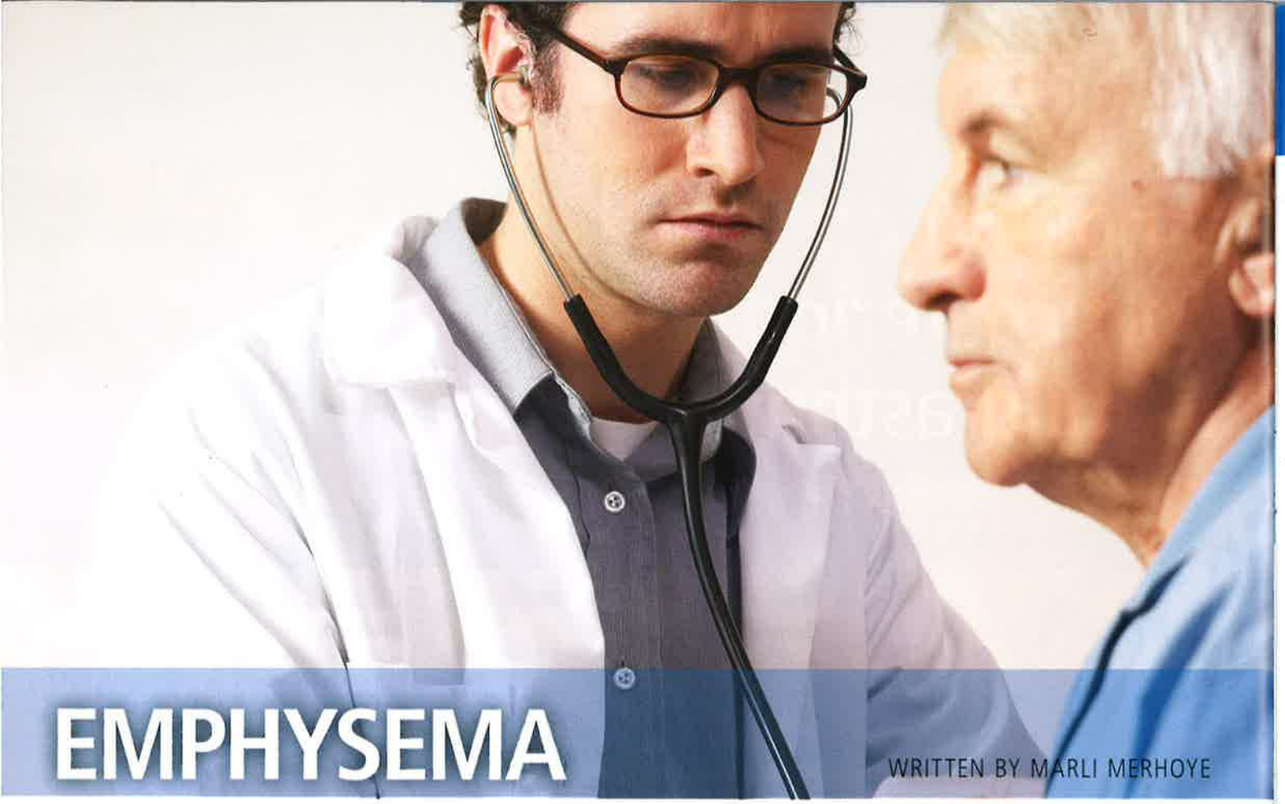
The effect of treatment with inhaled fluticasone propionate (1000 µg daily) or placebo for 3 weeks was studied in a double blind, prospective, randomised, placebo controlled study of 38 steroid naïve adult asthmatic patients (21 non-smokers). Efficacy was assessed using morning and evening peak expiratory flow (PEF) readings, spirometric parameters, bronchial hyperreactivity, and sputum eosinophil counts. Comparison was made between responses to treatment in non-smoking and smoking asthmatic patients.

Results:

There was a significantly greater increase in mean morning PEF in non-smokers than in smokers following inhaled fluticasone (27 l/min v –5 l/min). Non-smokers had a statistically significant increase in mean morning PEF (27 l/min), mean forced expiratory volume in 1 second (0.17 l), and geometric mean PC_{20} (2.6 doubling doses), and a significant decrease in the proportion of sputum eosinophils (–1.75%) after fluticasone compared with placebo. No significant changes were observed in the smoking asthmatic patients for any of these parameters.

Conclusions:

Active cigarette smoking impairs the efficacy of short term inhaled corticosteroid treatment in mild asthma. This finding has important implications for the management of patients with mild asthma who smoke.



EMPHYSEMA

WRITTEN BY MARLI MERHOYE

Persons with emphysema are, for the most part, males between 50 and 70 years old. Women get emphysema, too, but so far, not as often as men. However, these statistics are changing as women are starting to smoke more, and at an earlier age. A very high percentage of the people who have emphysema smoke cigarettes and have been heavy smokers for many years. Some people are born with a lack of a substance called alpha-1 antitrypsin. This makes them more likely than others to get emphysema and at an earlier age.

Emphysema, how does it develop?

Emphysema doesn't develop suddenly, it comes on very gradually. A person may initially visit the doctor because he or she has begun to feel short of breath during activity or exercise. The individual may think that he or she has asthma or heart disease. As the disease progresses, a brief walk can be enough to bring on difficulty in breathing. He or she has probably had several very bad colds each winter for the past few years, each accompanied by a heavy cough, and often with chronic bronchitis. The cough often persists between colds and becomes chronic.

What is emphysema?

It is believed that emphysema often is a late effect of chronic infection or irritation of the bronchial tubes. These tubes, the bronchi, connect the windpipe with the lungs. The bronchi look like branches of a tree, with the branches becoming smaller and smaller until each one ends in a cluster of tiny air spaces in the lung. From these tiny spaces (alveoli) oxygen enters the blood when air is breathed in, and waste gas (carbon dioxide) is removed from the lungs by breathing out.

Healthy lungs are elastic and spongy with all the breathing tubes wide open. In emphysema this elasticity is gone; the walls between the alveoli or air sacs within the lung lose their ability to stretch and recoil. The air sacs become weakened and breakdown.

Reference: http://www.lung.ca/copd/anatomy/emphysema.html

When the bronchi become irritated, the normal elasticity of the air sacs and the walls of the airways are destroyed. People with emphysema need to forcefully blow the air out in order to empty their lungs. Forcing the air out in this way puts pressure on the airways from the outside, compresses them and causes them to collapse. The walls of the tiny air sacs may even tear. Excessive coughing may cause the airways to collapse as well.

As the stretching and tearing of the walls of the air sacs continues, the lungs may become enlarged and less efficient at moving air into the lungs and contaminants out of the lungs. Because the walls of the air sacs are destroyed, there is less surface area available for gas exchange. Damage to the air sacs in the lungs

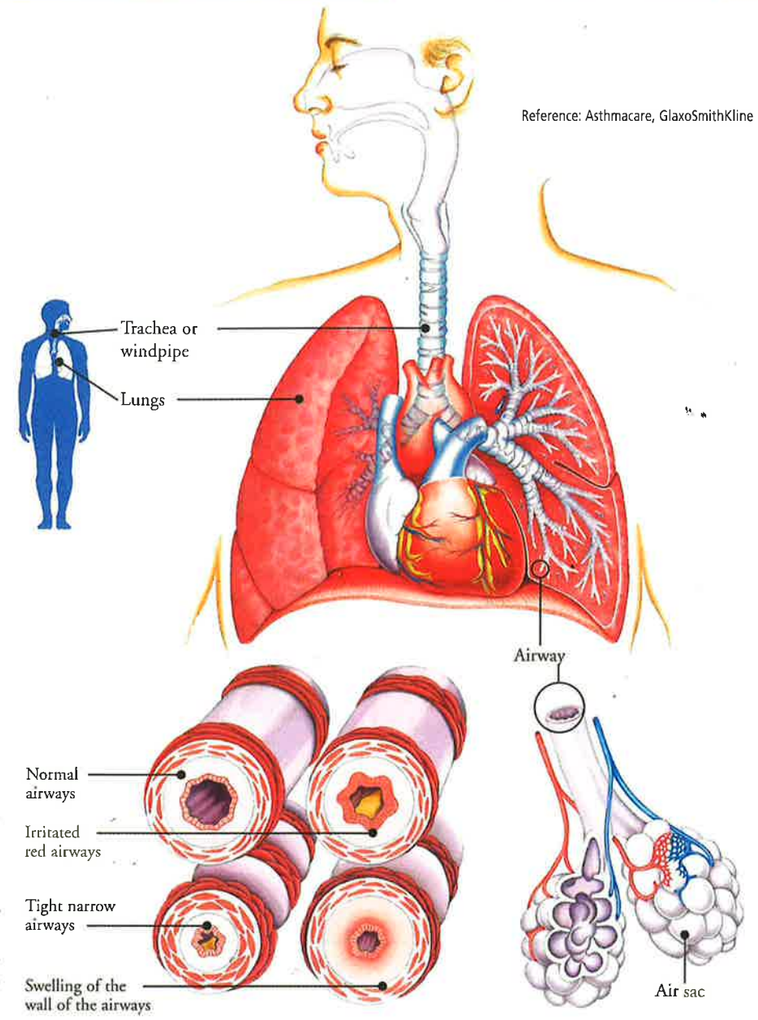
not only results in difficulty breathing, but the heart also has to work harder to circulate blood through the lungs. All these changes make less oxygen available to the body.

If infection or irritation continues or is repeated for a long time and the stretching and destruction of the walls of the air spaces goes on, the lungs as a whole may become enlarged, at the same time becoming less efficient in exchanging oxygen for carbon dioxide. Enlarged lungs are what give the disease its name, emphysema (which is a Greek word meaning "Inflation").

Symptoms

Symptoms of emphysema include cough, shortness of breath and a limited exercise tolerance. Emphysema is characterized by a large barrel-shaped chest, a poor air pumping system, and shortness of breath. Emphysema may begin with only a slight morning and evening inconvenience in breathing. Next, a short walk may be enough to bring on an attack of breathlessness. It may reach a point where every breath requires a major effort.

The changes of emphysema also interfere with the passage of blood through the small blood vessels of the lung. As interference grows, the heart must work harder to pump blood. The heart may enlarge under the strain and eventually give out. This type of heart failure is often an end result of emphysema. Emphysema and chronic bronchitis frequently co-exist together to comprise chronic obstructive pulmonary disease (COPD).



Reference: Asthmacare, GlaxoSmithKline

What causes emphysema?

Cigarette smoking is by far the most common cause of emphysema. Smoking is responsible for approximately 80-90% of deaths due to COPD. Years of exposure to the irritation of cigarette smoke usually precede the development of emphysema.

Diagnosis

The earlier COPD is detected, the better. Early treatment can slow the progression of COPD, help you to feel healthier, and enable you to go about your regular activities.

It is common to blame shortness of breath on age, but growing older does not make you short of breath. Unfortunately, in many cases by the time a person suffering from COPD seeks medical attention, much of the damage has already been done.

Diagnosis is often made after many lung changes have occurred. Although a definite diagnosis can be difficult, there are a few assessment procedures the doctor may do:

1. Ask you questions about your health history.

- What is your smoking history?
- Do you suffer from shortness of breath?
- What makes your shortness of breath worse?
- Do you cough?
- Do you bring up sputum, and if so, what does it look like?
- What is your family history of lung disease?

2. Conduct a spirometry test.

This test is a common and effective diagnostic tool that can easily be done in your doctor's office or at a nearby hospital or clinic. You will be asked to blow, as long and hard as you can, into a small tube attached to a machine. The machine measures how long it takes to blow out all the air from your lungs. The more obstructed your airways, the longer it takes to blow the air out. Spirometry is the most reliable method of testing your lungs.

3. Chest x-rays and blood tests may be done.

Chest x-rays can help determine if there is damage to the lungs. A blood test measures the amount of oxygen and carbon dioxide in your blood.

Treatment for emphysema

Doctors can help persons with emphysema live more comfortably with their disease. The goal of treatment is to provide relief of symptoms and prevent progression of the disease with a minimum of side effects.

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The doctor's advice and treatment may include:

1. Quitting smoking, a person with emphysema must stop smoking to retard progression of the disease; it is the single most important factor for maintaining healthy lungs.
2. Preventer medications could treat the inflammation and prevent irritation.
3. Bronchodilator drugs are prescription drugs that relax and open air passages in the lungs, these may be prescribed to treat emphysema if there is a tendency toward airway constriction or tightening. These drugs may be inhaled as aerosol sprays or taken orally.
4. Antibiotics will be prescribed if you have a bacterial infection, such as pneumococcal pneumonia.
5. Steroids may be used for relapses or "acute exacerbations."
6. Emphasizing the importance of regular exercise to maintain physical fitness, including breathing exercises to strengthen the muscles used in breathing and the Doctor may refer a person with emphysema to a respiratory rehabilitation program.
7. Oxygen therapy can be prescribed, either when exercising or on a as needed basis.
8. For persons with an alpha-1 antitrypsin (AAT) deficiency, weekly infusions of alpha-1 antitrypsin are available. These infusions are very expensive and it is not yet known if progress of this rare form of emphysema can be reduced by using this therapy. The infusion is not recommended for those who develop emphysema as a result of cigarette smoking or other environmental factors.

If an individual has emphysema, the doctor will work hard to prevent the disease from getting worse by keeping the person healthy and clear of any infection. The individual can also participate in this prevention effort by following these general health guidelines:

1. **DON'T SMOKE.** A majority of those who get emphysema are smokers. Continued smoking makes emphysema worse, especially for those who have AAT deficiency, the inherited form of emphysema.
2. Maintain overall good health habits, which include proper nutrition, adequate sleep, and regular exercise to build up your stamina and resistance to infections.
3. Reduce your exposure to air pollution, which may aggravate symptoms of emphysema. Refer to radio or television weather reports or your local newspaper for information about air quality. On days when the smog level is unhealthy, restrict your activity to early morning or evening. When pollution levels are dangerous, remain indoors and stay as comfortable as possible.
4. Consult your doctor at the start of any cold or respiratory infection, because infection can make your emphysema symptoms worse. Ask about getting vaccinated against influenza and pneumococcal pneumonia.

Prevention of emphysema

At this time, doctors do not know how to prevent emphysema. Continuing research is being conducted to find answers to many questions about this disease. But they do know that cigarette smoking is a definite cause, and that cutting out smoking can avoid damage for many who would otherwise develop the disease. Controlling air pollution can also help.

Modern medicine can usually slow down the progress of emphysema if patients are treated early. It is always the doctor's immediate concern to clear up any infection or irritation of a patient's respiratory system, because these things set up a possible starting place for emphysema.

Some people with emphysema also have a tendency to develop stomach trouble. If you have any digestive difficulty, be sure to discuss it with your doctor.

Keeping fit not only helps prevent emphysema and other diseases, it also speeds recovery if you do get sick. Set up a good health routine – and stick to it.

Avoid polluted air. This is advice that is easier to give than to follow since air pollution is a serious problem. However, do not expose yourself unnecessarily to dust or fumes of any kind.

Emphysema is a serious disease. It damages your lungs, and it can damage your heart. You cannot treat it yourself; see your doctor at the first sign of symptoms.

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Wheezing and asthma in infants

BY JUNE BELL

Does your child wheeze every time she/he catches a cold? Have you ever wondered if your child may have asthma? One of the most difficult diagnoses to make is asthma in an under 2 year old. Doctors have to rely on the information the parent/caregiver provides, however it is important to remember 'all that wheezes is not asthma.'

Lower respiratory tract infection (LRTI) is the most common reason for doctor visits and admission to hospital for the under 1 year old. LRTI usually presents as cough and/or wheeze and occurs most frequently in the winter months.

The Paediatric Society of New Zealand has developed guidelines on wheezing in the under 1 year old. These provide the health profession with evidence based research on the management of wheezing. Below is some information which parents/caregivers may find useful.

Facts about wheezing

- Wheezing is an uncommon occurrence during the first 2 months of life.
- In very young infants wheezing may only occur when they have an upper respiratory tract infection.
- The incidence of first time wheeze increases markedly, peaking between 2 and 5 months of age.
- A recurrent wheeze is classified as more than two separate episodes of wheeze with a period of good health between.
- Most children who have asthma will have increased symptoms of wheeze, cough, breathlessness and chest tightness when they have colds.

The three respiratory tract disorders that cause the greatest morbidity in children are:

- Bronchiolitis – the most common lower respiratory tract infection in infants less than 12 months of age.
- Pneumonia
- Asthma – uncommon under 12 months of age

Prevention of Lower Respiratory Tract Infections

The benefits of breast feeding and the risks of cigarette smoking have long been recognised. A large body of evidence has confirmed the protective effect of breastfeeding and the risks of smoke exposure for infants. There is a strong correlation between exposure to cigarette smoke and the incidence of lower respiratory tract infection. Studies in which the father smokes and the mother does not have confirmed the importance of post natal passive cigarette smoke exposure.

Recommendations are:

- Breastfeeding strongly protects against lower respiratory tract infection
- Sustained breastfeeding longer than 4 months of age provides greater protection
- Mothers should be encouraged to breastfeed their infants
- Cigarette smoke exposure increases hospital admissions for lower respiratory tract infection
- Parents should be strongly encouraged to provide a smoke-free environment for infants

Risk Factors of wheeze

Infant's airways are small. Boys are born with narrower airway passages than girls, and so are far more likely to wheeze during early childhood, which explains why two out of every three babies who start wheezing are male, but also why boys are more likely to outgrow wheezing than girls.

The risk of developing a wheeze increases with early viral infections, low socio-economic status, the number of children in a family and day care centre attendance.

Infants have proportionately less smooth muscle around their airways than adults and since their airways are smaller the airway space is compromised. This causes turbulence of the air as it enters and leaves the lungs making the wheezing sound. The lack of sufficient smooth muscle results in less support and less spasm of the airway, with a diminished response to bronchodilator medicine which opens up the airways and provides older people such quick relief. When a respiratory tract infection occurs, these small airways become swollen and fill with mucus more easily than an older child's or an adult.

An atypical wheezer's initial symptom may present at any time, but cannot be attributed to atopy or a virus. Gastroesophageal reflux and aspiration are not uncommon causes of wheezing especially during the first year of life, in otherwise healthy infants. These children may present with excessive vomiting or spilling, coughing or choking during feeds. They may present only with wheezing without any other clues to the diagnosis. Silent aspiration/ gastroesophageal reflux and aspiration must be considered in a child with troublesome wheezing.

It is important to remember that 80% of infants who start wheezing in the first two years of life do not go on to have asthma. These infants are well despite the presence of wheeze. Wheezing often ceases around the age of 3 to 5 years.

However, it is equally important to know that uncontrolled and persistent asthma can damage lungs over time, and the early use of anti-inflammatory medications in children over 1 year of age, may help prevent this from happening.

Continued on next page

CONGRATULATIONS!

Congratulations Miss Ann Wheat

Asthma Auckland Nurse Educator Ann Wheat gained her Bachelor of Nursing degree in April. Four years ago when she was doing her Asthma & COPD courses, she never thought that she could go this far. Three hearty cheers for Ann!!!

... from previous page

For this reason your doctor may choose to treat your child's symptoms as asthma.

To help your GP it is advisable to keep a symptom diary of your child's symptoms to show at your next visit. This may make a diagnosis clearer and indicates the most beneficial medication to be prescribed. It will also show the result of medication use.

You should talk to your doctor and about the possibility of asthma if your child has:

- Frequent wheezing episodes associated with or without other illness
- A continuing night time cough
- Coughing or breathlessness associated with active playing and exercise
- Any other breathing problems which may occur, such as during cold weather, temperature change, exposure to pets, smoke, chemicals or excitement or stress.

Tell your doctor if there is a history of asthma and/or allergy in the family.

Due to the difficulty in distinguishing early asthma from wheezing episodes, the approach to treatment is similar initially. An inhaled bronchodilator (salbutamol) will be prescribed to see if the symptoms are relieved with this treatment. Because this medicine is generally safe, even for use in infants and young children, the possible benefits of a trial of asthma medications usually outweigh the risks of side effects.

The severity of your child's breathing problems will help determine the medication she/ he will be prescribed. It will also be considered whether your child needs continuous treatment, such as preventer medication, or only when they have symptoms. If your child is prescribed an inhaled corticosteroid (preventer) this must be used every morning and night as prescribed to be effective. Asthma medication is delivered using a metered dose inhaler via a spacer. Proper administration is vital. A mask is crucial in this age group for maximal lung deposition. Using an inhaler by mouth is ineffective and wasteful of prescription medications. It is important your doctor or practice nurse ensure that you know how to use an inhaler and spacer correctly and how to maintain them. Ask if you are not familiar with asthma medication and are unsure.

An action plan explaining the recognition of symptoms, correct medication use, and when and how to seek help should be provided. Ensure that caregivers including staff at daycare and baby sitters understand the plan, and if your child needs their asthma medication these persons know how to use the inhaler and spacer.

As your child gets older take her/him to your doctor for a regular review to discuss her/his symptoms and appropriate treatment plan.

Although asthma is becoming more common each year, we do not know why. In New Zealand 1-3 children have asthma. A child is more likely to develop asthma if there is a family history of asthma and allergies. By studying the health of very young children and their parents and linking this to what we know about their lifestyles and environments, as well as their genes, we may begin to understand why so many children develop this chronic illness.

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Asthma Nursing Course and Chronic Pulmonary Disease Nursing Course (COPD) Information

The primary aim of Asthma and Chronic Obstructive Pulmonary Disease (COPD) Nursing Courses is to provide nursing health professionals with a high level of Asthma and/or COPD knowledge that promotes best practice, based on available evidence, and is consistent with national policy. The programmes are offered by distance learning with support from Frances Dower Unitec lecturer and Janette Reid, Asthma New Zealand's National Educator. The Asthma Nursing Course is accredited with 24 credits, COPD Nursing Course is accredited with 12 credits, which can be used towards gaining a Bachelor of Nursing degree. The value of a level 7, 24-credit course, which is done through a tertiary education establishment, is $800.00. At present Asthma New Zealand – The Lung Association is providing grants of $550.00 for each student towards the cost of the course, as a result students will be asked to contribute $250.00. Cost of the COPD Nursing course is $400.00 but a grant of $200.00 is available to practice nurses/community nurses from Asthma New Zealand/The Lung Association. In the four years since commencement of the Asthma Nursing Course 500 nurses have enrolled over 12 Intakes. In the second year of commencement of the COPD Nursing Course 85 nurses enrolled over six intakes.

The society has decided to make the course available at such a low cost to benefit nurses with a special interest in asthma, and increase the knowledge of nurses throughout New Zealand.

Applications are now invited from nurses wanting to enrol on the Asthma & COPD Nursing Courses in January 2006.

The closing date is 14th January 2006.

For information regarding Asthma & COPD Nursing Courses please email swarnah@asthma-nz.org.nz

Phone 09 623 0236 ex 809 – Janette or Swarna

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☐ I would love to do some voluntary work to fight asthma

Asthma New Zealand

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Thank you for helping us to fight asthma and make New Zealand breathe easy

Asthma New Zealand's partner societies around New Zealand:

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TARANAKI
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TU KOTAHI
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WHAKATANE
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WAIRARAPA
36 Harley St, Masterton.
Ph. (06) 377 1175

WELLINGTON
16 Hagley St, Porirura, Wellington.
Ph. (04) 237 4520

Questions, Letters, Articles, Advertisements

Asthma Update welcomes dialogue with readers. Whether you are a person with asthma, a company involved in the sector, or a potential advertiser, we welcome your enquiries and communication.

Contact:
Asthma New Zealand
581 Mt Eden Road, Auckland
Phone (09) 623 0236
Email anz@asthma-nz.org.nz

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