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Dealing with the Changing Disease Pattern and Management in Paediatrics & Cardiology

Dr. Godfrey CF Chan
Dr. Adrian Wu
Co-Editor

The contents of this issue include both common paediatric and cardiologic problems. The cardiology part is a continuation of the previous issue and it reflects the high disease burden related to this specialty and the mounting medical resources being invested into this major adult morbidity domain. New technology in both diagnosis and intervention keeps emerging from this area. We are delighted to have the great support from our cardiology colleagues and their willingness to share their knowledge with us.

On the other hand, the dropping in birth rate (only 0.73 birth/couple) in Hong Kong has a significant impact on the paediatric population. The local paediatric population has been shrinking gradually and so does the investment and resources for the medical care on children. The eventual negative impact on the future medical care of paediatric patients is worrisome. Despite the potential future challenge of trimming resources, there has been indisputable improvement in the healthcare for children locally for the past 2 decades. We all witness a major shift in the diseases incidences and decrease in childhood mortality within this period. Through the successful implementation of universal vaccination programme and effective treatment of infection, infectious diseases contributed to a much smaller proportion in the paediatric morbidity and mortality currently. Interestingly, new infections continue to emerge and will keep us alert all the times. However, their relative significances have been replaced by the increase trends in allergy related illnesses.

Allergy related illnesses are the commonest disease category in both private and public paediatric clinics nowadays. Our allergy and paediatric experts are sharing with us their views about how to prevent and treat allergy in children. That includes the hypothesis of allergy prevention, and the current thoughts on the management of food allergy and eczema. These are comprehensive reviews which can help to provide updated medical advices and management to our patients in the clinic.

Another common paediatric problem is haemangioma. It is the commonest childhood tumours and the nomenclatures had been confusing and did not provide any guidance to the treatments in the commonest childhood tumours and the nomenclatures had been confusing and did not provide any guidance to the treatments in the past. There have been changes in the diagnostic classification and management approaches for childhood vascular anomalies in recent years and a brief review is provided.

In this issue of brief review on the changing disease pattern and management in paediatrics & cardiology, we hope that we can provide you with useful information for your daily practice.
Clinical Management of Childhood Food Allergy

Dr. Marco HK Ho

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Childhood Food Allergy

There is an upsurge in demand of clinical service in the management of childhood food allergy in almost every developed place. Certainly, Hong Kong is of no immunity. Is food allergy a growing problem or is it just a diagnostic fashion? I believe that we are looking at a combination of 1) increased rates of sensitisation 2) increased likelihood of sensitisation progressing to disease 3) increased recognition of food allergy 4) increased use of medical services or a change of health seeking behaviour. Food allergy is a huge subject. There are vast diversities in pathogenesis, clinical presentations, cultural and racial variations and many unresolved controversies. In this review, I will try to focus only on some of the core knowledge that we would apply in our daily clinical care.

Key Concepts

- The prevalence is greatest in the first few years of life. (5% to 8% of children in their first year of life).
- Relative few foods account for about 90% of food allergy (milk, egg, peanut, nuts, soy, wheat, and fish).
- Milk allergy at 1 year of age is a risk factor for additional food allergies in later childhood.
- Food hyperresponsivity in early life is found to be a risk factor for atopic dermatitis, and later asthma.
- Food allergy should be differentiated from adverse reactions to food due to non-immunological mechanism.

Case Scenario

Tom, a 14-month-old boy was born after an uneventful pregnancy and delivery. He was exclusively breast fed for 5 months. The mother had unrestricted diet. Eczema developed from 6 to 8 weeks of age. His mother noted at the age of 9 months that he had developed a local urticarial reaction on the face and at the age of 10 months less than a quarter of teaspoon of peanut butter produced immediate angioedema of the face. There was no associated vomiting or wheeze. The angioedema resolved after administration of antihistamine when the mother brought her to the private practitioner. Mother wondered whether the ingestion of cow milk in the past could have caused mild eczema flares and for this reason he was maintained on soy milk. Mother and the family physician concerned about possible contraindication to MMR and influenza vaccine.

In the last few weeks, his eczema has been under good control. He also developed bouts of asthma and mostly were viral induced and was started on inhaled steroid and bronchodilator.

Family history:
- Father: current smoker with personal history of childhood asthma in remission
- Mother: current allergy to shellfish and personal history of childhood atopic dermatitis in remission
- Brother 5: years old - mild episodic asthma

Physical examination:
- Height and weight were along the 25th percentile. He looked well apart from patches of eczema distributed over flexural surfaces on both knees, on the nape of the neck and on the face.

Investigations:
- Skin prick tests: positive reaction to milk (5mm), egg (3mm), peanut (5mm), fish (3mm), dust mite (0mm)
- Total IgE: 200 u/l (normal 0-100)

Prevalence of Food Allergy in Young Children

<table>
<thead>
<tr>
<th>Food</th>
<th>Young children</th>
<th>Adult</th>
</tr>
</thead>
<tbody>
<tr>
<td>Milk</td>
<td>2.5%</td>
<td>2.0%</td>
</tr>
<tr>
<td>Egg</td>
<td>1.3%</td>
<td>3.2%</td>
</tr>
<tr>
<td>Peanut</td>
<td>0.8%</td>
<td>1.9%</td>
</tr>
<tr>
<td>Tree Nut</td>
<td>0.2%</td>
<td>0.3%</td>
</tr>
<tr>
<td>Fish</td>
<td>0.1%</td>
<td>0.07%</td>
</tr>
<tr>
<td>Shellfish</td>
<td>0.1%</td>
<td>-</td>
</tr>
<tr>
<td>Overall</td>
<td>6%</td>
<td>6%</td>
</tr>
</tbody>
</table>

Comment: We are going to review his food allergy problem in 3-2 years. 80-90% of children will grow out of egg allergy by age of 8. Peanut allergy is usually persistent. Recent literature reported 10-20% of children may eventually outgrow of the condition. The timing of peanut challenge could be guided by skin test activity or RAST levels. Good asthma control is vital to prevent life threatening food related hypersensitivity.

Natural History

Most children become tolerant or seem to “outgrow” their food allergies to milk, soy, and egg within a few years. 85% of children with milk allergy become tolerant by age of 3 years. 70% of children with egg allergy become tolerant by age of 3 years. Loss of clinical hyperactivity to peanut, though less common, occurs in 20% of peanut allergic children by age of 7 years. Older children and adults with food allergies are less likely to become tolerant. Allergies to other nuts, fish, and shellfish are believed to be more persistent.

Evaluation and Management

In evaluating adverse food reactions, the work-up...
depends on the age at onset of the disease (Table 2), on differentiating food intolerance from food hypersensitivity (Table 3), and on differentiating the food hypersensitivity is IgE or non-IgE mediated (Table 4). IgE-mediated allergy typically provokes and on symptoms within minutes to hours. Non-IgE mediated allergy induces symptoms from hours to days. The patient's history not only suggests the type of food hypersensitivity and causative food allergen but also provides information necessary to design an appropriate food challenge for confirming the diagnosis.

Negative prick skin tests is an excellent means of excluding IgE-mediated food allergy. The majority of children with positive skin tests to foods will not experience allergic symptoms when ingesting that food. The weal size of skin prick and level of food-specific serum IgE help to predict the clinical reactivity upon challenge but not the severity.

Some forms of oral food challenge are necessary to establish the diagnosis of food hypersensitivity. Prescribing a food elimination diet is no different from prescribing any medication and must be based on a firm diagnosis of specific food allergy.

Skin Testing

Skin testing with allergenic extracts is the favoured method of in-vivo testing for IgE-mediated sensitivity. Positive skin test results are useful for demonstrating sensitivity to the patient and the patient’s family, and for improving compliance. Skin testing alone is not diagnostic. Skin test results should be correlated with the patient's clinical history. With standardised allergen reagent and technique, the weal sizes of skin prick test correlates with clinical sensitivity but not severity. The larger the skin reaction size, the more likely of clinical reaction upon exposure but the size per se could not predict how severe the reaction will be.

Methods of skin testing (Diagram 1)

Percutaneous /epicutaneous(prick or puncture),
- Preferred
- Safer
- Easy to perform
- Less painful
- Less sensitive but more specific than intradermal / intracutaneous

Intradermal/intracutaneous testing
- Reserved for weak extracts such as testing for drug allergy.
- When the prick/puncture test is negative to allergens that are strongly suggested by the patient's history or exposure
- Not used in testing food allergens

Patch Test
Takes a few hours to 3 days
To evaluate delay hypersensitivity (e.g., atopic dermatitis due to food, contact dermatitis due to chemicals)

The size of the skin test reactions depends on 1) amount of specific IgE, 2)binding affinity of the IgE antibody, 3)releasability of the patient’s mast cell, 4)reactivity of the patients’ skin to histamine, 5)area of body used for testing, with the back being more reactive than the arms 6)age (baby younger than 4 months may have false negative results)

Laboratory Test

Allergen-specific IgE antibody
This is the most important analyte measured in the clinical immunology laboratory for diagnosis of allergic disease. It is performed as a confirmatory test to support a clinical history. Quantitative IgE levels to selected foods (milk, egg, fish, and peanut) if above a pre-defined IgE antibody threshold may eliminate the need for food challenges.

Specific in-vitro IgE immunoassays may be preferable to skin testing for patients who:
- Have severe dermatographism, ichthyosis, or generalised eczema
- Use long-acting antihistamines or tricyclic antidepressants
- Are at undue risk if their medications are discontinued
- Refuse skin testing or cannot cooperate with testing
- Have a clinical history suggesting a higher risk of anaphylaxis with skin testing to a particular allergen.

Total serum IgE
This is a diagnostic marker for allergic diseases, but its limitation lies in its wide overlap in the total serum IgE levels between atopic and non-atopic populations such as in parasitic diseases, skin diseases, other than eczema, drug induced conditions, hyper-IgE syndrome, etc.

Mast cell tryptase
This is a marker of mast cell activation during anaphylaxis. Elevated levels, (>10 g/L) are detectable 1 to 4 hours after the onset of systemic anaphylaxis with hypotension.

Provocation Test

The provocation test or challenge is recognised as the gold standard against all other in-vivo or in-vitro tests. Food challenge is the most common procedure carried out in the paediatric allergy service under the supervision of trained medical personnel. Food challenge procedures should be properly validated and standardised in administration and documentation. This involves giving a child increasing amounts of a food over a period of about several hours and observing for any objective clinical allergic response. This gives parents or families a scientific structure and a plan for the future and the safety of knowing that any reaction will occur within a setting with resuscitative facilities.

Open challenge
Scientifically less vigour
Useful in situation to refute the suspected history where the chance of allergy is low.
Useful for infants and young children in whom subjective symptom is rarely a problem.

Single-Blind Challenge
Very useful in daily clinical allergy practice.
Less time consuming than double-blind-placebo-controlled challenge
Often provides an excellent diagnostic aid in confirming or refuting histories of hypersensitivity reactions, in particular circumstances where patients opinions or concerns may influence the outcome.
Double-Blind-Placebo-Controlled Challenge (Diagram 2)
'Gold standard'
Designed to reproduce the individual's signs and symptoms
Tedious and time-consuming, may take days to complete

Clinical features of food allergy in children (Table 1)

<table>
<thead>
<tr>
<th>Cutaneous reactions</th>
<th>Gastrointestinal reactions</th>
<th>Respiratory reactions</th>
<th>Systemic anaphylaxis</th>
</tr>
</thead>
<tbody>
<tr>
<td>IgE mediated</td>
<td>IgE mediated</td>
<td>IgE mediated</td>
<td></td>
</tr>
<tr>
<td>Atopic dermatitis</td>
<td>Immediate gastrointestinal hypersensitivity</td>
<td>Rhinitis/conjunctivitis</td>
<td>Pulmonary haemorrhage (Heiner's syndrome [rare])</td>
</tr>
<tr>
<td>Angioedema</td>
<td></td>
<td>Asthma</td>
<td></td>
</tr>
<tr>
<td>Contact rash</td>
<td></td>
<td>Laryngeal oedema</td>
<td></td>
</tr>
<tr>
<td>Atopic dermatitis (some forms)</td>
<td></td>
<td>Food-dependent exercise-induced asthma</td>
<td></td>
</tr>
</tbody>
</table>

Age at onset of food allergy (Table 2)

<table>
<thead>
<tr>
<th>Age (yr)</th>
<th>Food</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-1</td>
<td>Milk, egg</td>
</tr>
<tr>
<td>1-2</td>
<td>Fish, peanut</td>
</tr>
<tr>
<td>&gt;2</td>
<td>Fruits, vegetables</td>
</tr>
<tr>
<td>&gt;3</td>
<td>Pollen-related cross-reactivity (oral allergy syndrome)</td>
</tr>
</tbody>
</table>

Food intolerance: adverse reaction to foods (Table 3)

<table>
<thead>
<tr>
<th>Food Intolerance: Toxic/pharmacologic</th>
<th>Bacterial food poisoning</th>
<th>Heavy metal poisoning</th>
<th>Scombroid fish poisoning</th>
<th>Caffeine</th>
<th>Tyramine</th>
<th>Histamine</th>
<th>Food Intolerance: Nontoxic/intolerance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nontoxic/intolerance</td>
<td>Lactase deficiency</td>
<td>Galactosaemia</td>
<td>Pancreatic insufficiency</td>
<td>Hepatitis</td>
<td>Reflux/hiatal hernia</td>
<td>Anorexia nervosa</td>
<td></td>
</tr>
</tbody>
</table>

Food allergy spectrum (Table 4)

<table>
<thead>
<tr>
<th>IgE-mediated</th>
<th>Non-IgE mediated</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oral Allergy Syndrome</td>
<td>Anaphylaxis</td>
</tr>
<tr>
<td>Urticaria</td>
<td>Eosinophilic oesophagitis</td>
</tr>
<tr>
<td></td>
<td>Eosinophilic gastritis</td>
</tr>
<tr>
<td></td>
<td>Atopic dermatitis</td>
</tr>
<tr>
<td></td>
<td>Protein-induced enteritis</td>
</tr>
<tr>
<td></td>
<td>Protein-induced enteropathy</td>
</tr>
<tr>
<td></td>
<td>Coeliac disease</td>
</tr>
</tbody>
</table>

Food Allergy in Asia

Food allergy is increasing in prevalence in Western population, but little is known about it in Asia. The perception is that the prevalence in this region is low, but is likely to increase with the global increase in allergy. Asia is unique because of the many different cultures and eating habits, with the result occurring of unique food allergens (Table 5). The lack of availability of epinephrine auto-injectors in many countries is an important issue that needs to be addressed. Large, well designed epidemiological studies are needed so that the scale of the problem can be understood. The labelling of packaged food manufactured in Asia is another area that needs to be improved.

Unique food allergen in Asia (Table 5)

<table>
<thead>
<tr>
<th>Food</th>
<th>Permanent</th>
<th>Reported in Country</th>
<th>Allergens identified</th>
<th>Incidence</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bird's nest</td>
<td>Chinese</td>
<td>Hong Kong</td>
<td>A 66 KB</td>
<td>Most common in children</td>
<td>May cause severe anaphylaxis in children</td>
</tr>
<tr>
<td>Backrub</td>
<td>Noodles, cakes, grains</td>
<td>China, Japan, Korea</td>
<td>Yes</td>
<td>Ranked fourth in Japan</td>
<td></td>
</tr>
<tr>
<td>Chestnut</td>
<td>Densetite</td>
<td>Korea</td>
<td>At least nine major allergens</td>
<td>Most common food allergen in Korea</td>
<td>Cross react with avocado, peach, apple and almond pollen</td>
</tr>
<tr>
<td>Chickpea</td>
<td>Staple food</td>
<td>Iran</td>
<td>Under study</td>
<td>1 in 4 of patients diagnosed of food allergy in India are patients of food allergy</td>
<td></td>
</tr>
<tr>
<td>Royal jelly</td>
<td>Health</td>
<td>Hong Kong, Australia</td>
<td>Under study</td>
<td>Reports of anaphylaxis</td>
<td></td>
</tr>
<tr>
<td>Sesame</td>
<td>Seasoning</td>
<td>Israel, Australia</td>
<td>Under study</td>
<td>Third most common food allergen in Israel</td>
<td></td>
</tr>
</tbody>
</table>

Food Anaphylaxis

Anaphylaxis is a potentially fatal multi-system syndrome resulting from massive release of inflammatory mediators from mast cells and basophils. Typically, the symptoms can be cutaneous, respiratory, gastrointestinal, and/or cardiovascular. Cutaneous symptoms are the most commonly occurring symptoms in acute anaphylaxis but the absence of cutaneous symptoms does not preclude the diagnosis. These symptoms often have an explosive onset, occurring within seconds to minutes of exposure to the triggering agent, but can also be delayed for several hours after the initial exposure. The acute anaphylactic event can be followed by a late-phase or biphasic reaction occurring 3 to 8 hours after the initial reaction. Biphasic anaphylaxis occurs in 5% to 20% of anaphylactic reactions. Half of fatal anaphylaxis occurs within the first hour.

In our practice, the common triggers are cow milk, egg, fish and peanut. According to Western data, peanut and tree nut are the most common causes of fatal anaphylaxis in children. Anaphylactoid (non-IgE-mediated) reaction may occur on the first exposure, whereas IgE-mediated and immunological mediated anaphylactic reactions require sensitisation from a previous exposure unless there is cross-reactivity. Sensitisation is possible through in-utero placental transfer of allergens. This explains why some infants have reaction upon first exposure of foods like cow milk, hen’s egg and peanut.

Epinephrine

Epinephrine is universally recommended as the drug of choice in the treatment of acute anaphylaxis and the preferred route of administration in children is intramuscular. Epinephrine is a potent catecholamine with both a-adrenergic and b-adrenergic properties.
The actions of epinephrine reverse all the pathophysiological features of anaphylaxis. Hypotension, peripheral vasodilatation, increased permeability, urticaria, angioedema are all reversed by the α-adrenergic stimulation from epinephrine. The success of cardiopulmonary resuscitation is often dependent upon restoration of aortic diastolic pressure. Increased aortic pressure enhances myocardial perfusion and cerebral perfusion is improved by increased carotid arterial pressure, both of which are results of arterial vasoconstriction and selective redistribution of cardiac output from the α-adrenergic effects of epinephrine. The β-agonist properties of epinephrine have positive inotropic and chronotropic effects on cardiac muscle, cause bronchodilation, and increase the production of intracellular cyclic AMP, thereby inhibiting mast cell mediator release.

The current recommendation of epinephrine dosage is 0.01ml/kg every 10 to 20 minutes up to a maximum of 0.3 to 0.5ml of 1:1000 w/v dilution. Epinephrine is available for out-patient use by parents and patient in a user friendly pre-loaded autoinjector, EpiPen® and EpiPen Jr®. This is a single-use device. EpiPen® dispenses one 0.3mg/dose of 1:1000 w/v aqueous epinephrine solution and EpiPen Jr® dispenses one 0.15mg/dose. The EpiPen dose is appropriate for a 30kg person, and EpiPen Jr® dose is appropriate for a child 15 kg. The autoinjectors are administered intramuscularly into the vastus lateralis muscle of the thigh. (Diagram 3)

Antihistatmine, systemic corticosteroids, and bronchodilators are secondary medications to be given after epinephrine has been administered. Pretreatment with corticosteroids and antihistamines is often ineffective in preventing biphasic anaphylaxis.

Patients with anaphylaxis need a thorough, comprehensive allergy-immunology evaluation to diagnose the specific aetiology. It aims to prevent contact with the allergens that will induce anaphylaxis in susceptible individuals, and to provide strategies for dealing with episodes of allergic anaphylaxis. The physician and family need to implement a written action plan detailing the early recognition of signs and symptoms of anaphylaxis, and the use of an epinephrine auto-injector for self-administration for pre-hospital treatment. Because fatal anaphylaxis occurs despite timely and appropriate treatment, successful avoidance strategies and education remain the mainstay of management.

Frequently asked questions:

What can I do during pregnancy to reduce the chance of my child developing allergies?

- Ensuring the baby’s mattress and bedding is free from mite allergen
- Reducing animal allergens
- Reducing dampness in the house
- Developing a smoke-free environment
- Preparing to breast feed
- Does not justify putting pregnant woman on special diet

When is it safe to start to give peanut butter to children?

- for children with atopic parents, it is probably best to avoid it completely before age of 6 months and arguably, the longer you delay the less likely the child is to become allergic to peanut.

What is the current advice regarding egg allergy and MMR?

- Egg allergy is not a contraindication to MMR (measles, mumps, rubella) vaccination.
- for those children who have experienced a very severe allergic reaction to egg, the vaccination should be given in a hospital setting, where the vaccine can be given by someone trained and equipped to deal with the very small chance of a reaction.
- where the allergy is mild the vaccination may be given in the community.
Suggested reading:

Update on the Management of Infantile Haemangiomas

Dr. Godfrey CF Chan

LMCHK, MD, DMD, MSc, FHKAM, FHKCPaed, FRCP(Edin), FRCPCH(UK)
Clinical Associate Professor Department of Paediatrics & Adolescent Medicine, Li Ka Shing Faculty of Medicine, The University of Hong Kong, Hong Kong SAR, China.

Classification and Clinical Behaviour of Infantile Haemangiomas

Haemangiomas are the most common tumours in the infancy period and affect approximately 10% of infants. However, due to the confusing terminology previously used for various vascular anomalies, inappropriate advice on treatments had often been given to the wrong type of haemangiomas. Mulliken and Glowacki's originally proposed a classification of vascular anomalies that divided them into either haemangiomas or vascular malformations. A revised classification was subsequently suggested by the International Society for the Study of Vascular Anomalies (ISSVA) in 1996 by using the same backbone but subdivided these 2 groups of lesions into more refined categories. Among the vascular tumours, it includes infantile haemangiomas, pyogenic granulomas, tufted angiomias, kaposiform haemangioendotheliomas, and spindle-cell haemangioendotheliomas. For vascular malformations, it is classified based on the type of blood vessels involved. For clinical management purpose, it can further be subdivided into low-flow lesions (including port-wine stains, venous malformations, lymphatic malformations, and some combined lesions) and high-flow lesions (including arteriovenous malformations). In order to have a better correlation between the type of haemangiomas and their outcome, the Haemangiomas and Congenital Vascular Malformations Nijmegen working group developed an additional set of diagnostic guidelines. It is based on six distinguishing historical characteristics including: 1) the presence of the anomaly at birth; 2) proliferative rate; 3) evidence of involution; 4) change in volume; 5) pain; and 6) outflow. It also considers 5 physical examination characteristics including: 1) the possibility of emptying or pushing aside the anomaly; 2) changes in volume during engorgement; 3) murmur/thrill/pulsation; 4) phleboliths; and 5) hyperp or hypertrophy. These characteristics can assist us in determining the nature of the vascular lesions so we can apply appropriate treatment strategy.

Haemangiomas are caused by inappropriate increase in the proliferation of the vascular cells while vascular malformations are due to inborn errors in vascular morphogenesis. They have distinct clinical behaviour and require different therapeutic approaches. Among vascular tumours, the commonest form in childhood is infantile haemangiomas (also known as capillary haemangiomas, strawberry haemangiomas in the past). Its natural history is well known. It typically emerges after birth and gradually increases in size throughout the subsequent 18 months before starting to regress. The involution process may take several years to complete and often leaves behind a hypopigmented scar. Another problem is that it may induce asymmetry between the involved and normal parts, usually in the form of hypertrophy of the affected region. In the past, active non-intervention remains the mainstay of therapy for most uncomplicated infantile haemangiomas. However, with an improved understanding of the natural course of haemangiomas, more active intervention was adopted in recent years for selected infantile haemangiomas including those found around the "beard areas", periorbital and facial regions.

Infantile haemangiomas located in the head and neck region with a "beard" distribution (including the preauricular areas, chin, anterior neck, and lower lip) are associated with symptomatic obstructive haemangiomas in the upper airway or subglottic areas and some eventually may require tracheotomy. Around 80% of infantile haemangiomas are found in the head and neck region and 8.5% of head and neck infantile haemangiomas have a beard distribution. Those with multiple haemangiomas (i.e. >3 or 4) around the beard areas are particularly at risk. Associated haemangiomas in the upper airway should be monitored closely.

Periorbital infantile haemangiomas including those involving the eyelids may cause amblyopia secondary to occlusion of the pupil. This may eventually lead to anisometropia or strabismus. Those with a size greater than 1 cm in largest diameter are commonly associated with amblyopia and almost 50% of these patients eventually require intervention. Diffuse haemangiomatosis and haemangiomas in patients with PHACES syndrome (Posterior fossa malformations, Haemangiomas, Arterial anomalies, Cardiac defects and coarctation of the Aorta, Eye abnormalities, and Sternal abnormalities or ventral developmental defects) are also highly associated with visual impairment.

Diffuse haemangiomatosis presenting in neonatal life or early infancy can progress rapidly with a fatal outcome. The affected infants usually have multiple cutaneous haemangiomas as well as deep-seated lesions in different visceral organs such as the liver or sometimes in the central nervous system. Development of hepatomegaly,
high-output cardiac failure, unexplained anaemia or thrombocytopenia in these infants reflects disseminated and aggressive nature of the disease. Early recognition with implementation of effective treatment is essential to improve the chances of survival.2 Another commonly associated feature of infantile haemangiomas is acquired hypothyroidism. This is secondary to an increase in the type 3 iodothyronine deiodinase secreted by the haemangiomas and is particularly common among infantile hepatic haemangiomas.10

Pyogenic granuloma is also known as lobular capillary haemangioma. It is a benign acquired vascular tumour of the skin and mucous membrane and is characterised by an erythematous, dome-shaped papule that bleeds easily. It can be found in the nostrils, oral cavity and the umbilical stump. Majority of the pyogenic granulomas run an uncomplicated course and can be easily treated with localised treatment such as excision or electrosurgery. Most will not recur and have good cosmetic results.13 Other forms of infantile vascular tumours include tufted angiomas and kaposiform haemangioendotheliomas. These vascular tumours are associated with low grade disseminated intravascular coagulopathy clinically manifested as thrombocytopenia with low fibrinogen level (Kasabach Merritt phenomenon). These proliferative vascular tumours are usually associated with hypertrophy of the affected parts of the body or limb. They are now considered as a different disease entity as compared to infantile haemangiomas and have a distinct pattern in their pathogenesis, histology, natural history and response to treatment. They typically respond poorly to systemic corticosteroids and interferon.12

Also found in the infancy period is Sturge-Weber syndrome. It is a neurocutaneous syndrome with facial port wine stain (mostly unilateral but can be bilateral). Port wine stain is a form of vascular malformations rather than haemangiomas but patients may also have leptomeningeal angiomatosis and congenital glaucoma. The leptomeningeal angiomatosis is associated with epilepsy in 75-90% of the cases and 60% of them are unfortunately refractory to anticonvulsant treatment. In selected cases, lobectomy with complete excision of the angioma or even hemisphreectomy may have to be considered.13

Treatment Options of Infantile Haemangiomas

Uncomplicated infantile haemangiomas can be observed for spontaneous involuton, especially for those which are small and proliferating slowly in the trunk. However, for those life- or function-threatening, or with the potential of being associated with structural anomalies should be treated as soon as possible.

Corticosteroids can be applied topically, intralesionally or systemically. Topical corticosteroid is effective only for small and superficial lesions. Oral corticosteroid in the form of prednisolone 2 to 3 mg/Kg/day remains to be the commonest form of treatment for infantile haemangiomas. The dose of corticosteroid can be titrated downward clinically according to the response and patients may require a prolonged maintenance phase with a personalised lower dosage over a total duration of 12 to 18 months. We usually attempt to taper the corticosteroids to alternate day low dose and keep it till 12-month of age. Due to the low potency of this approach and high incidence of corticosteroid induced side effects such as stuntting growth and obesity in young children, some centres advocated pulse methylprednisolone intravenously 2 mg/kg twice daily for 2 days as an alternative.14 It has to be followed by a maintenance phase of lower dose oral steroid treatment (2 mg/kg/day) of oral prednisolone. Gradual tapering is recomned laser therapy using the potassium titanyl phosphate (KTP) laser, and superficial haemangiomas can be treated with a pulsed dye laser. Fibrosis associated with intralesional therapy can be decreased by injecting small amounts of dilute steroid solution during treatment of the deep haemangiomas.16 Ulcerated haemangiomas or post-involution sequelae like telangiectasia can also be treated with specific laser. However, the mainstay of therapy for ulcerated haemangiomas remains to be good local wound care, analgesics and treatment of secondary infection.17

Interferon alpha (IFN-α) or other agents such as vincristine, thalidomide are therapeutic options for complicated haemangiomas which do not respond to corticosteroids. IFN-α is a cytokine with anti-viral, anti-tumour, and anti-angiogenic properties.18 IFN-α inhibits the secretion of angiogenic factors such as basic fibroblast growth factor and is an effective treatment modality for high-risk haemangiomas in children, especially those with steroid-resistance. The most commonly used dosage is 3x10⁶ units/m² IFN-α2b subcutaneously daily for a period of 3 months. According to the response, IFN-α can be tapered to every alternate day or less frequent administration subsequently.19 However, the most serious complication of this form of treatment is early neurological toxicity in the form of seizure and spastic diplegia, especially among infants.20, 21

New drugs such as topical 5% imiquimod cream 3 to 5 times weekly may be helpful in controlling superficial
infantile haemangiomas but has minimal effect on either mixed or deep subcutaneous infantile haemangiomas. Imiquimod induces production of interferon, tumour necrosis factor-α, and antiangiogenesis factors and when applied topically, there is no systemic adverse reaction noted and local irritation with or without crusting are the most common adverse effects.21

Patients presenting with Kasabach-Merritt phenomenon have a high morbidity and mortality rate. The majority of them do not respond to corticosteroids and interferon and recently, the use of low dose vincristine (0.5mg/m²) intravenously at weekly interval was shown to be an effective and safe modality. Increase in platelet count and fibrinogen level can usually be achieved within a few weeks. Most patients also showed significant decrease in the size of the vascular lesions but this occurred at a later stage as compared to the recovery of the platelet count and fibrinogen level. The average duration of treatment was around 20 to 30 weeks. Complications included constipation; jaw, bone and abdominal pain; loss of deep tendon reflexes or even foot drop. Regular monitoring of the emergence of peripheral neuropathy by nerve conduction study is mandatory. Most of the neuropathies are transient in character and will resolve spontaneously upon stopping of the vincristine. Another potential risk of this form of treatment is the skin burn induced by extravasations of the vincristine. Therefore this form of treatment should be given in specialty centres and sometimes the use of central venous catheter is recommended due to the difficult venous access. We had treated 3 patients with Kasabach-Merritt phenomenon who were refractory to corticosteroids and interferon treatment and 2/3 patients responded with no significant complications. The only one who failed to respond had kaposiform lymphoendothelioma by biopsy. Whether the difference in histology may account for the suboptimal response remains to be proven.15

Conclusion

Vascular tumours are commonly found in infants and young children and they have marked heterogeneity in terms of their clinical behaviour and response to treatment. If not managed optimally and early, disfiguring or dysfunctioning long term complications may occur in some patients. In severe cases such as haemangiomatis of the upper airway or disseminated haemangiomatis, it may even lead to fatal outcome. When we encounter an infant with haemangiomas, active non-intervention should be applied with caution and corticosteroids may not be the best initial option always. For complicated cases, early referral to specialty units can help to minimise unnecessary delay or treatment complications.

References

MCHK CME Programme Self-assessment Questions

Please read the article entitled "Update on the Management of Infantile Haemangiomas" by Dr. Godfrey CF Chan, and complete the following self-assessment questions. Participants in the MCHK CME Programme will be awarded 1 CME credit under the Programme for returning completed answer sheets via fax (2865 0345) or by mail to the Federation Secretariat on or before 31 March 2007. Answers to questions will be provided in the next issue of The Hong Kong Medical Diary.

Questions 1-10: Please choose the best answer.

1. The revised classification by the International Society for the Study of Vascular Anomalies (ISSVA) includes the following as vascular tumours, except:
   a. pyogenic granulomas
   b. tufted angiomas
   c. angiofibroma
   d. infantile haemangiomas
   e. kaposiform haemangioendotheliomas

2. The revised classification by the International Society for the Study of Vascular Anomalies (ISSVA) includes the following as vascular malformations, except:
   a. aortic aneurysm
   b. port-wine stains
   c. venous malformations
   d. lymphatic malformations
   e. arteriovenous malformations

3. The additional set of diagnostic guidelines by the Haemangiomas and Congenital Vascular Malformations Nijmegen working group includes the followings, except:
   a. the presence of the anomaly at birth
   b. proliferative rate
   c. evidence of inflammation
   d. change in volume
   e. pain

4. Infantile haemangiomas (capillary haemangiomas) can undergo involution spontaneously but in which of the following location, early treatment or intervention is currently recommended:
   a. haemangioma around the periorbital area
   b. haemangioma around the periumbilical area
   c. haemangioma around the perineal area
   d. haemangioma around the waist area
   e. haemangioma around the neck area

5. Since infantile haemangiomas (capillary haemangiomas) may have the following potential adverse outcome(s), intervention is advisable if it is located in the facial region: (choose the best answer)
   a. may take a long time to involute
   b. often leaves behind a hypopigmented scar
   c. may induce asymmetry
   d. untoward psychological effect on the child
   e. all of the above

6. Infantile haemangiomas located in the "beard" areas are associated with symptomatic obstructive haemangiomas in the upper airway and some eventually may require tracheotomy. The "beard" areas include the followings, except:
   a. preauricular areas
   b. chin
   c. anterior neck
   d. upper lip
   e. lower lip

7. Which of the following statements about infantile haemangiomas is correct:
   a. 50% of infantile haemangiomas are found in the head and neck region
   b. 85% of head and neck infantile haemangiomas have a beard distribution
   c. haemangiomas affect approximately 20% of infants
   d. periorbital haemangiomas >1 cm diameter are commonly associated with amblyopia
   e. multiple haemangiomas (i.e. >3 or 4) around the periorbital areas are at risk of having concomitant haemangiomas in the upper airway
8. Corticosteroids remain to be the commonest form of treatment for infantile haemangiomas. Which of the following statements about steroid treatment is correct:
   a. standard dose of oral corticosteroid (2mg/Kg/day) should be applied for at least 6 to 12 months
   b. the maximum duration of oral steroid therapy is 12 months
   c. pulse methylprednisolone regimen can replace the maintenance oral steroid
   d. topical corticosteroid is as effective as oral steroid
   e. haemangiomas with a deep or subcutaneous component often do not respond to oral steroid

9. The most threatening complication of interferon alpha (IFN-α) treatment in infancy period is:
   a. neurological toxicity
   b. hypothyroidism
   c. neutropenia
   d. anaphylaxis
   e. none of the above

10. The current recommended treatment for Kasabach-Merritt phenomenon is:
    a. low dose vincristine
    b. pulse methylprednisolone
    c. interferon alpha
    d. thalidomide
    e. no effective treatment

**ANSWER SHEET FOR MARCH 2007**

Please return the completed answer sheet to the Federation Secretariat on or before 31 March 2007 for documentation. 1 CME point will be awarded for answering the MCHK CME programme (for non-specialists) self-assessment questions.

Update on the Management of Infantile Haemangiomas

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**Answers to February 2007 issue**

Hypertension 2007 - Update on How to Choose and Prescribe the Best Medications for our Patients

Management of Atopic Eczema in Children

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Introduction

Atopy is used to describe a form of hypersensitivity based on a hereditary influence. This term was originated by Coca and Cooke in 1923\(^1\).\(^2\). Currently, it is confined to be used in those patients who suffer from excessive IgE response with low dose allergen. Eczema means chronic fluctuating skin eruption. Acute form of eruption presents with itching, redness, papules, vesicles, edema, serous discharge and crusts. The diagnostic criteria of atopic eczema were agreed by the Academy of dermatology at 59th annual meeting in 2001. In diagnosing atopic eczema, 3 major and 3 minor criteria are required. The following table shows the major and minor diagnostic criteria:-

**Major**
- Pruritis
- Lesions of typical morphology
- Lesions of typical distribution for age

**Minor**
- Early onset
- Ichthyosis Vulgaris
- Keratosis Pilaris
- Xerosis
- Hand eczema
- Cheilitis
- Conjunctivitis
- Dental-Morgan infraorbital fold
- Orbital darkening
- Facial pallor
- Facial erythema
- Pityriasis Alba
- Neck folds
- Itch increases when sweating
- Wool intolerance
- Solvents intolerance
- Follicular accentuation
- Skin reaction to food - Ingested
- - By contact

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<th>Major</th>
<th>Chronic or relapsing dermatitis</th>
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<td>Minor</td>
<td>Personal or familial history of atopy</td>
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<td>Environmental factors as triggers</td>
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<td>Delayed blanching</td>
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<td>Keratocnosis</td>
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<td>Anterior sub-capular cutaneous</td>
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<td>Increase serum IgE</td>
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<td>Increased in skin infections</td>
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<td>Impaired CMI</td>
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<td>Hamifis &amp; Raja (modified)</td>
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<td>Intra auricular fissures</td>
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<td>Angular cheilitis</td>
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<td>Digital papules</td>
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<td>Scalp scaling</td>
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<td>Eosinophilia</td>
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<td>Selected hematologic</td>
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Epidemiology and Prevalence:

In 1999, Williams et al conducted a large scale cross-sectional study in 56 countries.\(^3\) It was a questionnaire survey of school children aged 6-7 years and 13-14 years. The diagnostic criteria were the presence of itchiness and relapsing rash in past 12 months and it mainly affected skin creases. The severity was assessed by at least 1 night or more sleep disturbance in a week. The prevalence rate among different countries ranged from less than 2% to greater than 16%. The prevalence rate of eczema was 3.9 - 27.2% in Hong Kong, Japan and Sweden appeared as the highest. The overall male to female ratio was 1:1.3.

Another long term cohort study was conducted by Williams et al in 1998.\(^4\) There were 6877 babies born on 3-9 March 1958. They were then followed up at the ages of 7 years, 11 years, 16 years and 23 years. It was found that overall 15% of UK population suffered from atopic eczema at the age of 23 years. There were 571 studied children out of the 6877 developed eczema at 7 years of age. Of these 571 patients, 65% showed clear up of the disease at 11 years old, 74% showed clear up of the eczema at 16 years of age. A quarter of the 571 patients had persistent disease by age of 23 years.

In Queen Mary Hospital, the paediatric dermatology clinic started in June 2000. There are 767 paediatric patients in total actively followed up in a 6 years interval. Forty seven% (365/767) of our workload spent on the atopic eczema. There are a few refractory cases required second line systemic immunosuppressant.

Pathogenesis:

Many features of atopic dermatitis reflect a cell mediated or delayed hypersensitivity. Pathology and immunology studies on the affected skin showed that the epidermal dendritic cells carry all the IgE receptors including high affinity Fc receptors for IgE I (FcER I). In acute flare ups of atopic eczema, higher levels of FcER I were detected.\(^5\)\(^6\) The relevant IgE binds to low dose external allergens. When IgE binds with allergens to form a complex, it will activate the antigen presenting cells in particularly dendritic cells. The dendritic cells then move and activate the lymphocyte in the regional lymph nodes. Dendritic cell preferentially induces Type 2 T-helper cell (Th2, CD4+) response and subsequently induces cytokines IL-3, 4, 5 release that favour IgE synthesis, mast cell activation and eosinophilia.\(^7\)\(^8\) The imbalance between the type 1 and type 2 T-helper lymphocytes with polarisation towards the type 2 T-helper activity had consistently been found in atopy.

Treatment

The most important goal of the treatment is to break the vicious circle (allergen, skin breakage, itchiness and scratch). Initiation of aggressive management is
necessary to induce remission of disease activity then step down for maintenance therapy.

Avoidance of irritants and allergens is the first step. Allergens like sodium lauryl sulfate which dissolves the natural skin barrier can exacerbate the atopic eczema. Solvents like alcohol, gasoline and kerosene should be avoided. Detail history is needed to identify any topical, respiratory and dietary allergen. Once the suspected culprit has been identified, confirmatory allergic tests should be arranged. Avoidance and elimination diet should be implemented once the culprit is confirmed.

Other behavioural measures like exclusive breast milk was studied in the past for reducing atopic eczema. A meta-analisis in Cochrane library showed breast feeding or prolong use of hydrolysed formula has protective effects on allergy including atopic eczema compared with cow’s milk feeding. Usage of probiotics in preventing early atopy in high risk children is still controversial. Some of the European studies showed that transferring the patient to high altitudes will result in less atopy or less severe form of the disease. This observation suggested that change in weather may precipitate the atopy. Parents should pay more attention in treating the disease flare ups when there is a significant weather change.

There are different modalities of medical therapy for inducing remissions of atopic eczema which include topical agents, phototherapy and systemic medications. Topical agents are further divided into moisturisers, topical steroids and topical immunomodulators. Topical moisturisers is an important general measure to prevent skin breakage and itchiness. Topical moisturisers should be applied soon after soaking or bathing, they help in trapping water in the stratum corneum temporarily. Maintenance of the desired pliability of the skin and decreasing trans-epidermal water loss (TEWL) are the main aim of the moisturiser therapy. Many types of moisturisers are available in town, they are: 1) products of petrolatum; 2) Newer products containing ceramides/cholesterol and fatty acids which correct the TEWL for up to 24 hours. However, some of the moisturisers may trap/contain irritants. Newer formulations contain dimethicone with aluminum magnesium hydroxide stearate which effectively protect the underlying skin. Topical agents like calamine lotion, menthol/phenol in aqueous cream and crotamiton may be used but generally without significant clinical response.

Topical steroids have been used for many decades. In Hong Kong, parents generally refuse or afraid of using "steroid"-steroid phobia. Parents are usually afraid of the side effects of steroids. The side effects of topical steroids can be divided into two categories, namely systemic and local side effects. Systemic side effects are as follows: hyperglycaemia, hypertension, cataract, short stature, Cushing syndrome, osteoporosis, suppression of hypothalamic pituitary axis (HPA). Topical side effects include skin atrophy, skin infection, striae and telangiectasia.

Targeted use of different types and forms of topical steroid is the crucial element in reducing the occurrence of the side effects. No long term usage of topical steroid is advised. Use topical steroids when necessary and stop the medication in 1-2 days once the rash disappears. Start with less potent steroids first and step up the strength if the condition does not improve. Avoid using moderate potent steroids over the face and perineal regions in children. Most potent topical steroids are generally forbidden to be used in childhood eczema. Simple classification of the topical steroids is listed as below:

- Less potent steroids
  - Hydrocortisone
- Moderate potent steroids
  - Mometasone (Elomet)
  - Betamethasone (Diprosone)
- Most potent steroid
  - Clobetasol (Dermovate)

Besides potency, the bioavailability of topical steroids also depends on the vehicle, duration of therapy and method of therapy. For example, cream and gel forms have less systemic absorption than ointment. Occlusive methods on the other hand, will have more systemic effect when compared with non-occlusive ones. Duration of the occlusive will also significantly affect the bioavailability. Long duration of more than 96 hours will sharply increase the systemic absorption. Finally the integrity of the skin and area of steroid application are important for the drug penetration and systemic side effects.

A few studies showed that occlusive dressings with hydrocortisone for up to 24 hours have not been demonstrated to increase penetration. However occlusive dressing >96 hours markedly enhances penetration. Mometasone ointment penetration is around 2 times better then mometasone cream. Sixteen% of 97 paediatric patients developed HPA suppression after 3 weeks daily topical mometasone therapy over a mean basal surface area of 41% (ranging from 15-94%).

To reduce the side effects, a new group of topical agents was developed in the past decade i.e. topical immune modulator (TIM). Two different drugs have been launched on the market and they are named Tacrolimus and Pimecrolimus.

Tacrolimus is a macrolide immunosuppressant previously known by its experimental name FK506. It was first discovered in 1984 by Fujisawa. The chemical is produced by Streptomyces tsukabaensis (Fungus found in the soil near Tsububa in Japan. The name of this chemical was called tacrolimus because: T from Tsububa, -acrol from Macrolide, -mu from immune, -s from suppressant. It acts as a topical inhibitor of the phosphatase calcineurin. Because of the large molecular size, it is less able to penetrate thick skin compared with steroids. The advantage of this TIM is that it does not cause skin atrophy. There were ten different studies performed from 1994-2001. Five out of 10 randomised control trials showed 70-80% improvement in studies patients compared with 10-20% in placebo. Adverse effects of the Tacrolimus are mainly related to its systemic absorption. Minimal systemic absorption is expected when its use is within 3 weeks to 3 months. 76% of patients showed blood level <1ng/ml of tacrolimus when given for 1yea. In the ten studies, only 2 patients had 20ng/ml of tacrolimus in the blood, which correlated with the severity of the disease. The common side effects and the
percentage of occurrence of the topical tacrolimus are as follows: burning sensation 46-58%, Flu like symptoms 20-30%, headache 20%. Other rarer adverse effects include tingling sensation, alcohol intolerance, acne and folliculitis. The potency of the tacrolimus is comparable to moderate potent steroid (betamethasone).

Another TIM is named pimecrolimus (formerly SDZ ASM 981).\(^\text{1,16}\) Totally more than 400 ascomycin derivatives had been synthesised and finally SDZ ASM 981 was chosen for development because of its favourable safety profile and cutaneous efficacy. It was derived from a fungus, Streptomyces hygroscopicus var. ascomyceticus. The chemical structure is similar to Tacrolimus. In contrast to Tacrolimus, oral Pimecrolimus is a poor systemic immune suppressant, reducing the likelihood of systemic toxicity. The measured blood concentrations of Pimecrolimus were consistently low in both adult and paediatric patient as young as 3 months of age. (99% had <2ng/ml regardless of age, extent of BSA treated, duration of therapy). Therefore it is safe to use the Pimecrolimus in 3 month old babies, whilst Tacrolimus is advised to be used in children older than 3 years.

Oral antipruritics are commonly prescribed to the patients who suffer from atopic eczema, and antihistamine is the drug of choice.\(^\text{19}\) Sedative antihistamines like promethazine (phenergan), diphenhydramine (benadryl), chlorpheniramine (piriton), deschlorpheniramine (polaramine) and hydroxyzine (atarax) are usually used. Non-sedative antihistamines include loratadine (clarityne) and cetirizine (zyrtec).

Alternate therapy may be considered for severe refractory atopic eczema. Narrow band UVB, cyclosporin A\(^\text{20}\) and azathioprine\(^\text{21}\) had been shown to be effective ways in treating severe cases. In severe atopic eczema, patients may also suffer from complications like eczema herpeticum, low self esteem and even major depression. In Queen Mary Hospital we have started 6 patients on low dose azathioprine with reasonable effects.

**Conclusion**

Atopic eczema is the commonest paediatric dermatologic problem. In acute flare ups of the disease, aggressive topical treatment with either steroid or topical immuno-modulator should be offered to induce complete remission. Subsequent management requires emollient to reduce the transepidermal water loss. Sometimes, anti-histamines can be added in order to break the itchy-scratch-inflammation vicious circle. When choosing topical steroid therapy, one should avoid the prolonged use of medication for >three weeks. Use of the most potent steroid in childhood eczema should be avoided since it associates with higher chance of both systemic and local side effects. Newer topical immuno-modulator is a drug of choice for their steroid sparing effect. In severe refractory cases, patients should be referred to tertiary centres for second line systemic immuno-suppressants.

**References**

Today, allergies don’t just grow on trees

Xyzal® receptor occupancy predicts a potent antihistamine

We all know about allergies, like the hay fever you get in the park or countryside. But these days, more and more of us live in cities and towns and yet allergies haven’t gone away. In fact, they’re worse because, quite apart from the stress it causes, modern living has brought with it a range of new allergens in our environment and in our homes. Today, staying out of the park or countryside does not guarantee that you can avoid allergies. Xyzal® is a potent solution to today’s problem, an antihistamine with the persistence to control the symptoms of your allergy, no matter what modern life throws at you.  

*Xyzal® is indicated in the symptomatic treatment of allergic rhinitis (including persistent allergic rhinitis) and chronic idiopathic urticaria. 

Presentation: Tablets: Xyzal® 5mg tablets are white to off-white, oval, film-coated tablet with a Y logo on one side containing 5mg terfenadine dihydrochloride. 

List of excipients: Cornstarch, Microcrystalline cellulose, Lactose monohydrate, Collodial anhydrous silica, Magnesium stearate. 

Coating: Opadry Y-1-7000 comprising of: Hypermellose (E464), Titanium dioxide (E171), Macrogel 300. 

Reconstitution: Oral drops: Xyzal® 5mg/ml oral drops is a clear and colourless liquid containing 5mg terfenadine dihydrochloride per ml (one ml is equivalent to 20 drops). 

List of excipients: Sodium acetate, Acetic acid, Propylene glycol, Glycerol 85%, Methylparahydroxybenzoate (E218), Propylparahydroxybenzoate (E216), Sucrose sodium, Purified water. 

Dosage and administration: 

Adults and children 6 years and over: 5 mg daily (1 tablet of 5mg or 20 drops). Children aged 2 to 6 years: 2.5 mg (10 drops) in two intakes of 1.25 mg (5 drops per intake). Reduce the dose in case of renal insufficiency. 

Contraindications: Hypersensitivity to constituents; severe renal impairment. Avoid use during pregnancy. 

Precautions: Xyzal® is not indicated in children under 6 years of age. Patients intending to drive, engage in potentially hazardous activities or operate machinery should take their response to the medicinal product into account. Drug interactions: To date, no known relevant interactions with other drugs. As with other antihistamines, precautions is recommended with intake of alcohol. Adverse drug reactions reported under terfenadine or placebo during clinical therapeutic trials: headache, somnolence, dry mouth, fatigue, asthenia, abdominal pain. 


*Please refer to full SmPC before prescribing.*

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Can Allergies Be Cured?

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What are allergies?

Allergies are caused by immune-mediated reactions to seemingly innocuous substances such as pollens, foods and cosmetics. It has been estimated that 25% of Hong Kong children suffer from allergic rhinitis, 12% from asthma, 6% from eczema and 5% from food allergies. Although these diseases are rarely fatal, they can significantly affect the quality of life. For example, allergic rhinitis has been linked to sleep apnoea and hyperactivity in children. Complications such as chronic sinus infection, glue ears, dental abnormalities and corneal abrasions can arise in severe cases. Young children with allergic rhinitis have up to a 30% chance of eventually developing asthma.

Can allergies be prevented?

Family history is very useful in predicting how likely a child will develop allergies. Someone whose parents are allergic has a greater than 60% chance of developing allergies. However, there are ways to reduce this risk. Studies have shown that infants who were exclusively breastfed for at least 6 months have a much lower risk of developing significant allergies. Other studies showed that lowering house dust mite allergen levels in an infant’s environment reduces the risk of mite allergy and asthma. Interestingly, recent data suggest that children who have been living with cats since birth are half as likely to develop cat allergy as someone who did not grow up with cats. It seems that certain allergens such as cat dander induce tolerance in the immune system when exposed at high doses early in life, whereas other allergens such as pollens and house dust mites induce sensitisation. Effective house dust mite avoidance measures include the removal of carpets, the use of special mite-proof covers for the beddings, and keeping the relative humidity constantly below 55%.

Can allergies be cured?

Although some people can outgrow food allergy, allergy to inhalants tends to be lifelong. It is important to find out what the offending allergens are, since the first line of treatment is to remove those allergens from the environment. This means avoiding allergic foods, furry pets, and instituting mite control. Diagnosing allergies by skin prick tests is safe and accurate, and can give an answer within 15 minutes. However, some allergens such as pollens, cats and mites can be difficult or impossible to eliminate. Studies have shown significant levels of cat allergens in public places such as schools and libraries. Medications such as antihistamines and nasal steroid sprays can reduce symptoms, but many patients do not like using medicines continuously for an indefinite period of time. Allergen desensitization treatment, also called allergen immunotherapy or allergy vaccines, can often help people with severe symptoms uncontrolled by allergen avoidance and medications. This technique was invented in 1911, but advanced biotechnologies now available have greatly improved its safety and efficacy. It is widely used in Europe and the US to treat nasal and ocular allergy, asthma and certain types of skin allergy. Vaccines to treat peanut allergy are under development and will hopefully become available within a few years. During the initial phase of treatment, the dose of vaccine is increased gradually through a series of injections until the therapeutic dose is reached. This dose is then given periodically, usually every month. This builds up an immune tolerance, and the person gradually loses sensitivity towards these allergens. Clinical improvement is usually seen within 3 to 6 months, by which time the majority of patients can stop using medications. Some patients even readopt their pets from relatives and friends. Treatment should continue for three to five years, after which the improvement appears to be long lasting. Although it is too early to say whether these patients are cured, but studies of patients who underwent two years of treatment showed no loss of efficacy six years after treatment has ceased. Moreover, the result of a large European study showed that children who have been desensitised to pollens were 2.6-fold less likely to develop asthma than children who received placebo injections. These children were also less likely to develop sensitivities to other allergens. This is very encouraging news indeed, as this is the first time a treatment is shown to prevent asthma and allergy. Studies using other routes of administration such as sublingual tablets are being carried out to find more convenient alternatives.

Patients with food allergies can develop symptoms ranging from mild itching to full blown anaphylaxis. Food allergies can cause significant difficulties in daily lives, especially for caregivers of young children with severe symptoms. Living with the fear that the next bite of food can lead to serious consequences can take a
major toll psychologically. There have been anecdotal reports of successful oral desensitisation of immediate type food allergies such as milk, egg and shellfish. A recent study of oral egg desensitisation in seven children with non-anaphylactic allergic reactions to egg showed that five subjects could be desensitised to tolerate at least 8 g of egg without reaction. This procedure must be carried out under strict medical supervision, but the development of modified food allergens with reduced allergenicity in the future holds promise as a cure for food allergies.

References

Echocardiogram is a totally non-invasive ultrasound assessment of the heart and the big vessels. It differs from ordinary ultrasound scan by providing information on
1. function, both dynamic systolic and diastolic
2. haemodynamics
3. anatomy
of the heart and related big vessels.

Echocardiogram can be performed under resting condition as baseline comprehensive assessment, or under controlled stress condition for functional assessment of significance of valvular lesion or inducible ischaemia in coronary artery disease.

In this short article, we shall discuss some of the applications of echocardiography in common problems in clinic practice.

A. Assessment of chest pain symptom
Symptom of chest pain is a common presenting symptom in clinics. The list of possible causes from any medical textbook includes
a. coronary artery disease
b. aortic dissection
c. pulmonary embolism
d. peptic ulcer disease
e. reflux oesophagitis
f. musculoskeletal pain
g. pleuritis / pericarditis
h. neuritis
i. gall stone
j. psychosomatic etc

Most of the time clinicians want to rule out coronary artery disease and aortic dissection etc as they are treatable and carry most of the prognosis. A comprehensive echocardiogram can give us clues and even make the diagnosis of acute coronary syndrome, aortic dissection or pulmonary embolism. (Fig. 1)

Regional wall motion abnormality and thinning indicates old myocardial infarction or significant ischaemia at rest. Although Treadmill ECG is usually ordered to look for possible ischaemia, an exercise stress echocardiogram is usually more helpful and accurate in diagnosis and risk stratification.

Traditional Treadmill ECG uses ST segment changes as an indicator of underlying myocardial ischaemia. However Treadmill ECG has limited sensitivity in pre-menopausal women because of their lower prevalence of coronary artery disease. Moreover, common baseline ECG abnormalities like bundle branch block, left ventricular hypertrophy, digoxin or simple non-specific ST segment or T wave abnormality can make subsequent ECG changes non-specific to ischaemia and the whole test inconclusive.

Exercise stress echocardiogram uses direct visualisation of the LV wall motion as a marker of inducible ischaemia. Wall motion abnormality occurs earlier in the ischaemic cascade and this makes the test more sensitive and specific (overall sensitivity 85%, specificity 80%) and equivalent to nuclear myocardial perfusion scan (Fig. 2). The advantages of exercise stress echocardiogram are cost-efficient, no need of contrast or radiation exposure and high acceptability to the patient. The patient can be informed of the result right after the test in the clinic. Apart from diagnosis, it stratifies patients into different risk categories and prognosticates (Fig. 3).

B. Assessment of exertional shortness of breath or decrease in exercise tolerance
Exertional shortness of breath or subjective decrease in exercise tolerance is another common presenting symptom in clinical practice. The causes can be divided into three categories (1):

a. cardiac causes like systolic or diastolic heart failure
b. pulmonary causes like COAD, fibrosis, pleural effusion etc
c. systemic causes like anaemia, thyrotoxicosis etc

A detailed history and examination can rule out most of the systemic and pulmonary causes. A comprehensive echocardiogram is indispensable in the diagnosis of cardiac causes of exertional shortness of breath.

Most practitioners focus only on the ejection fraction (EF) of the Echocardiogram report. A low EF suggests systolic heart failure is a possible cause for the patient's symptom. However, more than 40% of patients suffer from diastolic heart failure with normal ejection fraction > 50% (Fig. 4). Diastolic heart failure means the heart needs to be filled with increased pressure (elevated LV end-diastolic pressure). In the old days, diagnosis can only be arrived at by invasive cardiac catheterisation. However, nowadays non-invasive echocardiographic assessment has been considered the choice and tool in diastolic cardiac assessment for clinical studies and cardiology practice.

I do not intend to discuss cardiac diastology in this short article as it is more complex than simple systolic ejection fraction. Patients with systolic heart failure
usually complain with fatigue due to inadequate cardiac output. On the other hand, patient with diastolic heart failure has dominant “congestive” symptom either shortness of breath, orthopnoea or ankle oedema.

LV diastolic dysfunction can be classified into stages (Fig. 5)

a. Stage 1: impaired LV relaxation, a stage with minimal symptom at rest but disproportional shortness of breath due to elevated filling pressure when tachycardia sets in during exertional or atrial fibrillation
b. Stage 2: pseudo-normalisation, a stage with exertional SOB on minimal exertion due to elevated filling pressure at rest
c. Stage 3 and stage 4: reversible and irreversible restrictive, the advanced stages of diastolic dysfunction with severe symptoms even at rest and poor prognosis.

Diastolic heart failure is indeed common and an usually missed diagnosis. Hypertension and coronary artery disease are two common causes of LV diastolic dysfunction. Hypertension causing left ventricular hypertrophy is the commonest cause of increased LV stiffness thus impaired relaxation.

By applying Doppler study on trans-mitral inflow, pulmonary venous inflow and Spectral Tissue Doppler (TDI) on mitral annular velocity, previously complex diastolic parameters can easily and quickly be elucidated9,10. Practitioners do not need to memorise all these terminology but it is the duty of the reporting cardiologist to comment on the ventricular diastolic function and evidence of elevated filling pressure in a comprehensive echocardiogram. (Fig. 4)

Treatment of diastolic dysfunction needs to be individualised and will not be discussed here.

C. Incidental findings of heart murmur, abnormal ECG or cardiomegaly on CXR

An incidental finding of possible cardiac abnormality is a common result of cardiac consultation.

1. Heart murmurs can be functional, but can also be the first abnormal finding in a patient with significant structural heart disease. The characters of a typical functional heart murmur are ejection in nature; of soft character (grade 1 to 2 over 6); localised at left sternal border, changes with position and with no other cardiac abnormalities detected on examination. A diastolic murmur is never functional even though it may not be significant. The American College of Cardiology class 1 and 2 indications to comment on the ventricular diastolic function and evidence of elevated filling pressure in a comprehensive echocardiogram. (Fig. 4)

The aim of Echocardiogram is to find out the source of the heart murmur, exclude significant structural heart disease, quantifies significance of valvular or structural heart disease and look for associated lesions that will affect the patient’s management11.

2. ECG abnormality

ECG finding of left ventricular hypertrophy (LVH) or right ventricular strain pattern are indications for Echocardiogram. ECG voltage criteria of LVH is less specific than direct LV wall thickness and LV mass measurement by echocardiogram. High QRS voltage without LVH is seen in young and slim individuals. Abnormal right ventricular depolarisation signal from ECG can be an early sign in patients with potentially fatal arrhythmogenic right ventricular dysplasia (ARVD). Severely abnormal Echocardiographic findings are major criteria for such clinical diagnosis12. Moreover, incidental finding of “pathological Q” wave needs corresponding echocardiographic findings for confirmation of old transmural myocardial infarction.

3. Incidental finding of cardiomegaly on CXR (Fig. 6 a,b & c)

Causes of cardiomegaly on CXR can be due to

a. left ventricular dilatation
b. right ventricular dilatation
c. left, right or biatrial enlargement
d. underlying valvular heart disease causing such chamber dilatation
e. pericardial effusion
f. composite shadow from the lung without true cardiac abnormality

A simple resting comprehensive echocardiogram is an indispensable test for such differentiation.
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Management of Diastolic Heart Failure

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Case Presentation
A 70 year-old lady with known history of uncontrolled hypertension for years, presented with bilateral ankle swelling and impaired exercise tolerance. Her serum N-terminal pro B-type natriuretic peptide (BNP) was increased. Echocardiogram showed normal left ventricular systolic function but there was presence of left ventricular hypertrophy with diastolic dysfunction. Her symptoms were controlled with diuretics and angiotensin receptor blocker. However, she stopped the treatment by herself after her symptoms had improved. She was finally admitted to the hospital because of acute pulmonary oedema.

Epidemiology
Patients with diastolic heart failure (DFH) are not uncommonly encountered by primary care physician. About 30% to 55% of patients with heart failure have preserved systolic function, often defined as left ventricular ejection fraction (LVEF) greater than 40 to 50%
. In Asia, due to the high prevalence of hypertension, 50% of patients with heart failure have normal systolic function and the incidence of DFH will further increase due to the aging population. The mortality of DFH is about 5-8% per year, which is about half of that of systolic heart failure. In a recent community-based prospective cohort of patients with heart failure, more than half (55%) had preserved systolic function and the mortality of DFH (16% at 6 months) was shown to be comparable to that of systolic heart failure. The morbidity in terms of reduction in quality of life and exercise tolerance, hospitalisation rates and health-care costs per person for both systolic and DFH are similar.

Pathophysiology
The clinical manifestations and haemodynamic consequences of systolic and DFH are similar, although the primary pathophysiology mechanisms are different. DFH is caused by left ventricular diastolic dysfunction, leading to increased resistance to left ventricular filling and eventually resulting in heart failure syndrome. Hypertension, diabetes mellitus, and coronary artery disease are common conditions that predispose to the development of DFH. Impaired ventricular relaxation and increased ventricular stiffness are the underlying mechanisms causing diastolic dysfunction. Activation of the renin-angiotensin-aldosterone system plays an important role in the development of myocardial fibrosis and stiffness. Inhibition of renin-angiotensin-aldosterone system has been demonstrated to reduce myocardial stiffness and leads to regression of myocardial fibrosis.

Diagnosis of DHF
According to ACC/AHA guidelines, the diagnosis of DFH is based on the clinical findings of heart failure with the findings of preserved LVEF and the absence of valvular abnormalities. The European guidelines require the finding of evidence of diastolic dysfunction. Echo-Doppler assessment is a convenient and effective way of assessing diastolic function. Echocardiogram can also exclude other specific conditions, such as hypertrophic cardiomyopathy, aortic stenosis, infiltrative cardiomyopathies and pericardial disease. BNP, a cardiac neurohormone released by the ventricles in response to volume expansion and pressure overload, has recently emerged as a marker for heart failure. The level of BNP correlates with severity of diastolic dysfunction and is highest among those with a restrictive filling pattern. Study in Hong Kong has shown that N-terminal pro BNP can help in the diagnosis of DFH. Several studies report the use of BNP in the diagnosis of systolic and DFH in the primary care, urgent care, and emergency department settings. It can be used as a screening test to rule out heart failure due to its high negative predictive value.

Principles of Treatment
The current strategy for the management of DFH focuses on symptom relief and modification of underlying causes of DHF. Diuretic therapy is required in symptomatic patients but should be used cautiously, as excessive diuretics may decrease cardiac output and cause hypotension and renal failure. Compared with systolic heart failure, DFH patients require lower doses of diuretics and may tolerate their withdrawal without increasing heart failure symptoms. Tachycardia is very poorly tolerated in DHF, and in the presence of atrial fibrillation, adequate control of heart rate by beta-blockers or calcium channel blockers and maintenance of sinus rhythm are beneficial. Reduction in heart rate
may be associated with improved ventricular filling and haemodynamics. Non-pharmacological measures such as salt restriction, weight control and exercise have been shown to reduce symptoms in patients with DHF. For primary care physicians, hypertension is the most common underlying cause of diastolic dysfunction; therefore, aggressive management of hypertension is essential in the prevention and management of DHF. In patients with coronary artery disease, therapies to relieve myocardial ischaemia are also likely to be beneficial.

Specific drugs

It is likely that most of the proven drugs used in treating systolic heart failure (ACEI, angiotensin receptor blockers, beta-blockers, aldosterone antagonists) may also be beneficial in the treatment of DHF. However, evidence-based treatment strategies for DHF are limited. Two large-scale randomized controlled trials have recently provided some evidence for the treatment of DHF. The Candesartan in Heart Failure - Assessment of Reduction in Mortality (CHARM) - Preserved study is a randomized placebo-controlled trial that has provided some evidence of the on-going clinical trials are completed.

Conclusion

HF is common and may account for more than 50% of heart failure cases among the elderly. The principles of treatment include symptom relief by judicious use of diuretics, rate control of atrial fibrillation, and aggressive control of hypertension. Limited evidence from randomised control trials suggested that angiotensin receptor blockers and ACEI are beneficial. More evidence-based treatment strategies to enhance the care of this condition will be available when some of the on-going clinical trials are completed.

References

Updates on Percutaneous Coronary Intervention

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Ever since the invention of percutaneous coronary intervention (PCI) to treat coronary artery disease (CAD) around twenty years ago, its clinical use has been expanded dramatically. According to overseas and local experiences, the number of PCI performed every year far exceeds the number of patients undergoing coronary artery bypass surgery (CABG). The procedural success, safety and durability of PCI have dramatically improved because of the advance in technology, refinements in periprocedural adjunctive pharmacology (e.g. glycoprotein IIb/IIIa inhibitors, alternative thrombin inhibitors), and a better understanding of early and late outcomes. Indeed, it is now one of the most frequently performed medical procedures.

In this article, I will review the latest advance in the field of intervention cardiology and the different indications of PCI.

Percutaneous Transluminal Coronary Angioplasty (PTCA)

Andreas Gruentzig performed the first balloon angioplasty in human in 1977, using a prototype fixed-wire balloon catheter. Balloon angioplasty expands the coronary lumen by stretching the vessel wall and tearing the atherosclerotic plaque. Meanwhile, longitudinal redistribution of the atherosclerotic plaque contributes to the increase in vessel lumen. PTCA is able to improve coronary flow and hence reduces coronary ischaemia in selected patients. However, the uncontrolled tearing of the atherosclerotic plaque may result in flow-limiting coronary dissections that results in abrupt closure in 5 to 8% of patients. These patients may need urgent CABG in order to salvage ischemic myocardium. On the other hand, elastic recoil of the stretched vessel wall left an average residual stenosis of 30 to 35%, with higher residual stenoses correlated with higher subsequent recurrence rates. Repeat revascularisation by either repeat PTCA or CABG was in the range of 20 to 40%. Hence, the long-term efficacy of PTCA is significantly limited by restenosis. Nowadays, in the era of stent, standalone PTCA is now reserved only for cases such as smaller (<2.5mm) vessels and early anastomotic lesions in saphenous vein grafts in which the long-term benefits of coronary stenting are limited.

Coronary Atherectomy

By removing the obstructing atherosclerotic plaque in the coronary arteries, a larger vessel lumen can be obtained. This may improve the vessel wall compliance and render the vessel more dilatable. Different atherectomy devices are available including directional coronary atherectomy (DCA), rotational atherectomy, transluminal extraction atherectomy and excimer laser coronary angioplasty. DCA uses a directional cutting device to remove the atheroma while rotational atherectomy uses a rotating burr to remove calcified atheromatous plaque. Before the availability of coronary stents, there was huge enthusiasm in the use of these devices in the hope of improving both short and long-term outcomes. However, multiple studies showed standalone coronary atherectomy did not improve the restenosis rate compared with PTCA. In a contemporary cardiac catheterisation laboratory, coronary atherectomy is now being used in less than 10% of cases. DCA may still be used for bulky lesions in the left main and proximal left anterior descending arteries whereas rotablator is occasionally needed to pre-treat rigid and calcified lesions for subsequent stenting.

Coronary stents

The first implantation of coronary stent in human in 1986 has revolutionised the practice of intervention cardiology. By providing a scaffold to the dilated coronary lesion, coronary stents almost completely eliminate elastic recoil which is the major cause of restenosis after PTCA. Achieving a larger vascular lumen, coronary stenting effectively reduces angiographic and clinical restenosis. By tagging up uncontrolled dissection, it also significantly reduces acute closure of the vessel after PTCA. This significantly decreases early ischaemic complications and improves the safety of the procedure.

A large number of randomised trials demonstrated clear benefits of coronary stents over PTCA in different subsets of patients. These included de novo or restenotic lesions, abrupt or threatened closure (i.e. bailout situation), saphenous vein grafts, chronic total occlusion and acute coronary syndromes. Hence these devices are now used in more than 80% of all PCIs.

Despite the improvement in early outcomes, 10 to 20 percent of patients had recurrent symptoms within 12 months after stent implantation. Repeat angiogram usually revealed new tissue formation (neointimal hyperplasia) within the stent. Histological analyses revealed that a great deal of the volume of the in-stent restenotic lesion is made up of “myxomatous” tissue,
comprising occasional stellate smooth muscle cells embedded in a loose and highly hydrated extracellular matrix.

The major risk factors for restenosis are longer lesion length (>30mm), longer stent length, small vessel diameter (<2.5mm), smaller post-treatment lumen diameter, reopened chronic total occlusion, ostial and bifurcation lesions, and the presence of diabetes. If multiple risk factors are present, the restenosis rate may be up to 40 to 50%. Even though restenosis seldom causes acute coronary syndrome or cardiac death, patients often need repeated admissions and revascularisation to relieve symptoms. Different systemic medications were tested in clinical trials to lower the restenosis rate but without avail. Radiation treatment (intracoronary brachytherapy), presumably targeting smooth muscle cell proliferation and matrix synthesis, was used to treat in-stent restenosis. In several randomised, placebo-controlled trials, intracoronary brachytherapy showed significant improvement in angiographic and clinical outcome in native coronary arteries and in SVGs. However, recent data showed that there was a late increase in restenosis and clinical events among those received brachytherapy. Most if not all interventionalist had stopped using brachytherapy for several years already.

Drug eluting stent (DES)

The idea of combining a coronary stent and an anti-proliferative drug is to target the different components of restenosis. By achieving a bigger post-procedural vessel lumen, the use of bare metal coronary stent reduces both clinical and angiographic restenosis. As said before, 20 to 30% of these patients have recurrent symptoms due to neointimal hyperplasia which is a ‘normal response’ to vascular injury. A number of systemic agents have been used to prevent restenosis after balloon angioplasty and stenting, but none has had a consistent effect on restenosis prevention. By local delivery of a highly efficacious anti-proliferative drug, DES is very effective at suppressing the local neointimal proliferation. Angiographic and clinical restenosis in general have been reduced to less than 10% and 5% respectively. Some DES systems (e.g. sirolimus, everolimus, polymer-delivered paclitaxel) have, in clinical studies, significantly reduced restenosis whereas other had no or a limited effect (e.g. batimatstat, dexamethasone, stent-based paclitaxel) or were clinically detrimental (e.g. actinomyacin D, 7-hexanoylactaxol). It demonstrated the important interaction between the stent design, the presence or absence of a polymeric coating that is used to deliver the drug, and the types of agents that are delivered to the vessel wall.

The dramatic reduction in restenosis allowed interventionist to expand the application of PCI to different subsets of patients. Patients who were at high risk for restenosis in the bare metal stent era (e.g. diabetic patients with multivessel diseases, left main disease) may now consider PCI as an option to CABG figures. Indeed, a recent study showed that multivessel PCI with DES might be as good as, if not better than, CABG.

Recently, there is a hot debate around the issue of late stent thrombosis associated with the use of DES. By implanting a metallic stent in the blood stream, there will be continuous activation of the flowing platelets which may result in platelet clump and then blood clot formation. This may cause acute closure of the stent and patient would then present with ST elevation MI. The risk is substantially reduced when endothelialisation (i.e. the stent luminal surface was covered by a thin layer of endothelium) is completed. This will take around four weeks for a bare metal stent. The use of dual anti-platelet agents (i.e. aspirin plus ticlopidine or clopidogrel) has been proven to reduce the incidence of stent thrombosis significantly. For DES, the anti-proliferative drug will act on not only smooth muscle cells but also endothelial cells. Hence, the process of endothelialisation for DES is much prolonged. For bare metal stent, it is recommended to take both aspirin and clopidogrel for at least 4 weeks. On the other hand, a recommended duration of dual anti-platelet agents for DES is 6 to 12 months.

Drug eluting stent prevents restenosis by the presence of a drug that prevents the proliferation of smooth muscle cells. However, the use of dual anti-platelet agents (i.e. aspirin plus ticlopidine or clopidogrel) has been proven to reduce the incidence of stent thrombosis significantly. For DES, the anti-proliferative drug will act on not only smooth muscle cells but also endothelial cells. Hence, the process of endothelialisation for DES is much prolonged. For bare metal stent, it is recommended to take both aspirin and clopidogrel for at least 4 weeks. On the other hand, a recommended duration of dual anti-platelet agents for DES is 6 to 12 months.

Distal Embolic Protection Devices

Although distal embolization of atherosclerotic debris was thought not to be a problem during the early years of catheter-based intervention, it is now recognised as a potential cause of distal myocardial necrosis after PCI. The role of distal embolisation is particularly important in SVG and acute coronary syndrome. It is also now recognised as a cause of neurological complication after carotid stenting.

There are three different types of distal protection devices. The first involves distal occlusion using a low pressure balloon. Any debris liberated by intervention remains trapped in the stagnant column of blood and can be aspirated before the occlusion balloon is deflated to restore antegrade flow. The second class consists of distal filters that are passed across the target lesion in their smaller collapsed state, opened to approximate the edges of the filter material against the vessel wall, and remain in place to catch any liberated embolic material larger than the filter pore size, until they are collapsed after stent deployment, thereby removing the captured embolic material from the body. The third type involves proximal occlusion of the treated vessel with balloon. Any debris liberated can then be aspirated from the guiding catheter.

These devices have been studied in SVG and been proven to reduce post-procedure complication significantly. However, data on ST elevation MI were inconsistent. The use of these devices in carotid stenting is under extensive study right now. In short, there are mounting evidence that distal atherosclerotic debris commonly embolises from lesions in many vascular
territories during PCI, that it can be recovered using any of the three types of embolic protection device, and that use of those devices reduces the incidence of end-organ injury.

**Indications for PCI**

**Patients with No or Mild Angina**
Patients who are asymptomatic or have only mild symptoms are best treated with medical therapy unless one or more significant lesions subtend a moderate to large area of viable myocardium, the patient prefers to maintain an aggressive life style or has a high-risk occupation, and the procedure can be performed with a high chance of success and low likelihood of complications[2]. PCI should not be performed in patients with absent or mild symptoms if only a small area of myocardium is at risk, if no objective evidence of ischaemia can be found, or if the likelihood of success is low or the chance of complications is high.

There is no evidence so far that PCI of a haemodynamically insignificant ‘vulnerable’ plaque prevents a subsequent MI.

**Patients with Moderate or Severe Angina**
Patients with moderate or severe angina are suitable candidates for PCI provided that the lesion subtends a moderate to large area of viable myocardium[2]. PCI should be offered even if they have a higher risk for an adverse outcome with revascularisation.

**Patients with Unstable Angina or Non-ST elevation Myocardial Infarction**
Before the availability of glycoprotein IIb/IIIa inhibitors and coronary stents, clinical studies could not document any benefit of early invasive therapy in patients presented with unstable angina or non-ST elevation MI[17,18]. However, recent trials, with the use of both glycoprotein IIb/IIIa inhibitors and coronary stents, showed that early invasive treatment (i.e. cardiac catheterisation and revascularisation) could reduce the rate of death, myocardial infarction or urgent revascularisation[19]. These benefits were highest in high risk patients (e.g. those with rest pain, cardiac enzyme elevation, or ECG changes). Hence, patients now presented with unstable angina or non-ST elevation MI are generally advised to undergo cardiac catheterisation and PCI if needed.

**Patients with ST elevation Myocardial Infarction**
Patients with ST elevation MI have thrombotic occlusion of the culprit coronary artery. It is well proven that early reperfusion by fibrinolytics could limit the infarct size and could hence prolong survival and improve prognosis. It is now generally accepted that catheter-based reperfusion (i.e. primary PCI) is preferable to fibrinolytics if facility and expertise are available. This is because primary PCI allows more rapid, complete and sustained reperfusion. Meanwhile, it also allows treating the residual coronary lesion which probably would cause myocardial ischaemia if left alone. Invasive strategy also allows better delineation of the coronary anatomy and hence better risk stratification. Most importantly, primary PCI is associated with less mechanical complication (e.g. myocardial rupture, acute mitral regurgitation, ventricular septal defect) and thrombolysis-related intracranial haemorrhage which is usually fatal.

**Conclusion**

PCI is one of the most frequently performed medical procedures. With the improvement in hardware and accumulation in clinician’s experience, its usage and indications are ever expanding. The availability of DES allows more difficult subset of patients to be treated by this catheter-based procedure. Prolonged duration (1 year) of dual anti-platelet therapy after DES is recommended. Patients with unstable angina, non-ST elevation MI, ST elevation MI and moderate to severe angina symptoms should consider PCI as the treatment of choice. Their symptoms and prognosis would be significantly improved after this invasive procedure. For those with no or minimal symptoms, they are candidates for PCI if there is objective evidence of significant myocardial ischaemia. Otherwise, medical treatment with aggressive control of cardiovascular risk factors should be considered.
This 72-year-old gentleman with history of hypertension and hypercholesterolaemia presented with typical angina. Cardiac catheterisation showed critical stenoses in proximal, mid and distal left anterior descending artery (LAD), first obtuse marginal branch (OM1) & distal left circumflex artery (1a), and subtotal occlusion of the right coronary artery (RCA) (1b). Without DES, the patient had a high restenosis rate and CABG would be a preferred option. This patient subsequently underwent PCI with deployment of 3 DES in LAD (1c), 1 DES in OM1 (1c) and 3 DES in RCA (1d). The plan was to continue life-long dual anti-platelet therapy.

References

Figure Legends
This 72-year-old gentleman with history of hypertension and hypercholesterolaemia presented with typical angina. Cardiac catheterisation showed critical stenoses in proximal, mid and distal left anterior descending artery (LAD), first obtuse marginal branch (OM1) & distal left circumflex artery (1a), and subtotal occlusion of the right coronary artery (RCA) (1b). Without DES, the patient had a high restenosis rate and CABG would be a preferred option. This patient subsequently underwent PCI with deployment of 3 DES in LAD (1c), 1 DES in OM1 (1c) and 3 DES in RCA (1d). The plan was to continue life-long dual anti-platelet therapy.
A Brief Review of CT Coronary Angiogram

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Introduction

Helical computed tomography (CT) started in the years of ‘90, enable faster scan acquisition and faster data reconstruction. Multislice CT (MSCT) is the latest technology in this decade, functioning by acquiring multiple simultaneous slices using multi-detector system. Most advanced and contemporary models are the 64-slices machine, dual source CT machine and the 256-slices machine. The last-mentioned machine model, which is still on-trial, will be coming to the market soon. All these machines are competing for better performance by improving the spatial and temporal resolution. To date, a good CT machine can complete the scan in less than 10 seconds in optimal settings.

Indication for CT Coronary Angiogram

Framingham risk stratification alone is unable to confirm coronary artery disease. Other functional tests have the sensitivity and specificity of about 70-80% in detecting ischaemic heart disease. Compared with invasive coronary angiography for detection of significant lesions, segmental based sensitivity, specificity, and positive and negative predictive value of MSCT are 95%, 98%, 87% and 99% respectively (JAMA 2006; 293:2471-2478). General indications of CT Coronary Angiography are the asymptomatic patients with 2 or more cardiovascular risk factors, diabetic patients, patients without typical chest pain but abnormal treadmill stress test, post-CABG patients to assess the graft, patients with acute chest pain at the emergency department and those with anomalous coronary arteries.

Patients who are NOT considered for cardiac CT imaging are those with typical angina and strongly positive treadmill test, patient with renal dysfunction, known allergy to contrast media and young patient without any coronary risk factors.

The ACC guidelines suggest that screening for calcification may be of value for an individual who is considered to be at intermediate 10 year risk which is defined as a 10% to 20% likelihood of a cardiac event within the next 10 years (Circulation 2000).

Another role of cardiac CT is for RF (Radiofrequency) ablation planning. CT helps to provide a clear and accurate anatomy prior to ablation, especially in atrial fibrillation ablation. By integrating the CT images and Mapping system, it allows precise and shorter time of ablation.

CT is also useful in defining the coronary sinuses anatomy prior to CRT implantation.

Physical Principle and Practical Issue

Scan resolution

The 16/64 slices CT machine with narrow scan collimation provide reconstructed data that are isotropic. An isotropic voxel is a cube measuring the same x, y and z planes. That means an identical spatial resolution in all planes. This property significantly enhances the reconstruction work of CT Coronary Angiogram.

Radiation dose and Risk

As the number of slices increase, radiation efficiency also increases. Radiation dose is affected by mAs (electric current of the machine) and kVp and both have to be kept as low as possible. The radiation doses of coronary angiogram by a 16-slice and 64-slice CT machines are approximately 8-10 mSv and 13-18 mSv respectively. (Hunold et al Radiology 2003, Raff et al Jacc 2005)

Radiation risk of 14mSv is about 0.07% life time risk for inducing fatal cancer.

The risk of developing severe allergic reaction with non-ionic contrast is about 0.2%-0.7% of patient. Please be reminded that the background radiation dose that we receive each year from the sun and soil is about 3-4mSv and is indeed equivalent to about 300 chest radiographs. Single CT coronary angiogram is about 3 to 6 times the yearly radiation dose.

Spatial Resolution

A good spatial resolution is important as we are scanning coronary arteries which have diameter between 1mm to 4mm. To differentiate a 10%-20% coronary stenosis, we need an isotropic spatial resolution of at least 0.3mm or less. The spatial resolution of about 0.33-0.35mm is obtained by a 64-slice machine, with the isotropic voxel geometry of 0.5mm, and seems to be working good!

Temporal resolution

In order to image the rapid cardiac cycle, we need a good temporal resolution. Similar to photography, shorter temporal resolution means that we can catch the image at an almost frozen motion. Ideal temporal resolution should be less than 50msec. Better temporal resolution can be achieved by faster gantry (CT machine) rotation.
However it is eventually limited by the mechanical factors, and related to the weight of the whole machine. Other method to improve the temporal resolution include segmental/multi-segmental reconstruction with ECG Gating and more recently, the dual source CT technique. The retrospective ECG Gating algorithm/retrospective data reconstruction can further deal with the challenge of rapid cardiac motion.

**Beta Blockers**

The purpose of using beta blockers is to decrease the heart rate, so as to improve the temporal resolution. It also lowers the cardiac motion, lowers the cardiac output and therefore improves the contrast enhancement of the coronary arteries. Ideally the heart rate suitable for imaging should be less than 75bpm and being optimal at about 65bpm. We should be aware of the side effects and contraindications of beta blockers.

**Breath hold**

Purpose of breath holding during the scan is to reduce motion artifacts related to breathing. It is no longer a challenge nowadays using the 64-slice machine, and we need patients to hold their breath for less than 10 seconds. Breath holding period will be even less for more advance machines like dual-source or 256-slice machine. Actually longer breath holding may have influence to the heart rate.

**Contrast Media and Injection Design**

Non-ionic water soluble contrast (370mg/ml concentration) is used for injection, usually at right upper limb (providing short pathway towards the heart), preferably at the antecubital vein, to facilitate a higher injection rate of 4ml/sec. Good washout of contrast from the right heart can be achieved by saline chaser, and further hastens arrival of contrast and increases the peak enhancement by 30%.

The design of Dual-Flow Contrast Injection helps the Cardiac Function Analysis by improving the right heart visualisation.

**Post-acquisition Data Processing**

Under the property of retrospective ECG gating, different segments of data are available for reconstruction. The principle is to select the best imaging quality for a particular coronary artery at a specific segment. That is to review various segments for a particular vessel, apply the appropriate filter and window setting.

The tools of post-processing include Maximal Intensity Projection (MIP), Volume Rendering (VR) (Figure 1 & 2), Curve Planar Reconstruction (CPR) (Figure 3 to 6) or Multiplanar Reconstruction (MPR), 3D and cine loop. Radiologist or Cardiologist can apply different tools in the processing for each vessel.

**Clinical application**

**Calcium scoring**

Basic assumption is that the calcium load is proportional to the atherosclerotic plaque burden in the coronary arteries. It is well known that coronary artery calcification is a reliable sign of chronic atherosclerotic change and the calcified plaque is not amorphous or dystrophic calcification. High calcium scores pose an extremely elevated risk of hard cardiac events (Wayhs et al Jacc 2002;39:225) and therefore helpful in risk stratification. There is a strong prognostic value of calcium scoring (Guerci A, JACC 2003). Calcium scoring also has a role in monitoring therapy for those patient who are taking lipid lowering therapy or statin (Circulation 2002: 106:1077-1082). However the pitfall is that absence of calcium does not imply absence of atherosclerosis.

Methods of calcium load assessment include the Agatston score, volume scoring and mass scoring.

**Assessment of Coronary Stenosis**

There are methods to assess stenosis, including eye-balling which is a qualitative assessment, direct measurement on cross-section MPR or long axis MIP, and using automated vessel analysis software programme. The latter two are quantitative methods.

Most studies used a threshold of 50% luminal stenosis to define clinically significant stenosis, while the coronary flow reserve is not affected till the lumen is narrowed by 70-75%. The low threshold of 50% luminal narrowing decreases the likelihood of failing to identify patients in whom cardiac catheterisation is needed. Each stenosis should be assessed in at least two orthogonal views, and only the lumen is compared but not the wall.

In general CT tends to over-estimate the degree of stenosis due to the exaggerated partial volume averaging effect in order to assess the small-sized coronary arteries (Am J Cardiol 2005;96:784-787, JACC 2005;46:552). Other factors contribute to the difference are the difference in measurement techniques and difference of inter-observer agreement on estimation.

**Imaging of Bypass Graft**

Arterial grafts can be harvested from the left internal mammary artery (LIMA) connecting to the left anterior descending artery (LAD) or from the inferior epigastric artery to the right coronary artery (RCA). On images, the multiple metallic clips are the hints of previous grafting. Venous grafts are usually connecting from the ascending thoracic aorta to the LAD, Diagonal branch or obtuse marginal branch etc. Graft is usually well seen due to be relative less cardiac motion artifacts. We do need to be aware of the rather high location of origin of graft, eg. LIMA graft. For the totally occluded graft, the graft is not well visualised since no luminal contrast is present, and we can only see the graft nipple which is the origin of the graft. Graft stenosis is usually well assessed due to its little motion artifact.

**Imaging of Stent**

Restenosis is still a major hazard and CT Coronary Angiogram is able to assess patency. In general stent which is made of tantalum and gold will produce more blooming artifact. Strut thickness, and of course the size of the stent, play important role by producing more blooming artifact. Larger size with relative less percentage of strut thickness will enable better visualisation of the lumen. Using a more sharp Reconstruction Kernels may improve stent visualisation.
Stent occlusion is relatively easy to diagnose when the stent lumen appears darker than the enhanced vessel lumen proximal to the stent, associated with absence of enhancement in distal vessel lumen.

Instent stenosis is suspected or considered if there is a dark rim inside the stent and the luminal diameter is reduced by more than 50%. This diagnosis can confidently be made by the 64-slice detector machine for stent larger than 3mm calibre.

**Practical Tips**

Setting up one's routine when reviewing the images would be very useful. Try to use the tools available (VR, MIP, MPR/CPR) to review each artery. Look at the calcium score, you may need to give up some arterial segments which are heavily calcified. Beware of arterial calcification.

Stenosis has to be reviewed by different orthogonal planes before establishing the diagnosis. Grade the stenosis by luminal narrowing, and not to be influenced by the plaque, in order to avoid over estimation. In reverse, if there is no plaque, think about whether there is really a stenosis. Usually 70-75% are the best segment for slow heart rate, but try to review other segments if a lesion is suspected.

**Prospective**

**Cardiac Function Analysis**

By producing cardiac MPR images, the cardiac functional analysis can be done by software. The size or volume of the heart chambers can be measured at respective cardiac phase and the ejection fraction can be calculated. Cardiac wall motion can be analysed at a particular plane at a particular phase of the cycle and therefore any focal wall motion defect can be depicted. Studies have shown some good correlation between the CT and MR concerning the left ventricular (LV) function analysis (Radiology 2004:230 403-410); but the LV volume seems to be significantly higher, and ejection fraction and cardiac output be estimated significantly lower by Cardiac CT as compared with MRI in another recent finding (ECR 2006), related to the use of beta-blocker.

**Myocardial Perfusion using MSCT**

Studies are in progress and mostly on animal models. Results of MSCT are comparable with MRI in detection and sizing of myocardial infarction. However work needs to be done on stress induced myocardial ischaemia.

**Plaque Imaging**

MSCT can detect both soft plaque and calcified plaque and this is better than conventional cardiac catheterisation. Studies have shown that MSCT is not as good as Intravascular ultrasound (IVUS) in assessment of plaque volume (JACC 2005 46:147-154). However the CT may be helpful in characterising the plaque nature by assessment the density. We are still working on accurate differentiation of high lipid content plaques from fibrous plaque; depiction of culprit plaque with high lipid content and classify those vulnerable plaques.
中國古陶瓷之收藏 – 給入門者的一些建議

葉承標醫生
英國倫敦大學醫學士，英國皇家內科醫學院院士
英國愛丁堡皇家內科醫學院院士，香港醫學專科學院院士（內科）
心臟科專科醫生

中國陶瓷的歷史可謂源遠流長，至今已有數千年之歷史。自遠古時代之陶器如龍山文化，仰韶文化，然後發展至周朝之原始青瓷。此乃瓷器之始祖。到了唐宋時更有多色釉之出現，唐三彩是中國陶瓷之代表作，甚為外國收藏者之喜愛。到了宋朝中國瓷器更是百花齊放，是為中國陶瓷之高峰，有五大窯（汝窯、哥窯、官窯、定窯、磁州窯）和八大窯系（河北窯、龍窯、青白或影青）之出現，另外誠窯和吉州窯亦不乏精品的代表作，名窯中之精品不乏中國收藏者所垂涎，元青花代表青花瓷器之達至成峰，去年一元青花大碗“鬼谷子下山”就曾創下逾一億港元之天價成交。而明及清朝之官窯瓷器在最近十數年之價格日漸高，其價值亦不遠超宋窯之精品。

中國之瓷器在宋末時期已有外銷。故在土耳其之地博物館藏有豐富及精美之元青花瓷，主要是作為日常用品如餐具。但真正令歐洲人欣賞而收藏中國瓷器卻是自英法聯軍於一八六零年之第二次鴉片戰爭時將大量精美之官窯瓷器從北京、天津帶回國，從而傳入西方，英人 A. Morrison 就從英軍軍官買入了大量“戰利品”等。其他藏家如法國人 E. Grandier 亦有大量之收藏，並曾將捐贈予巴黎之國家博物館（現藏巴黎私人美術館）。十九世紀末歐洲開始有收藏家專門收藏中國瓷器，其中有名的包括美國的 Sir P. David, A. Clark, G. Eumorphopoulos, 美國人 W. Cox, 瑞典的 G. Lindberg，他們都曾舉世聞名的收藏家，在上一世紀對中國瓷器在國外之發揚光大有極大的貢獻。

中國瓷器之品種很多，五花八門。是一門很大的學問，所以筆者認為若要成為成功的收藏家，則自己要在以下之方面功夫：

1. 要研究中國陶瓷之歷史，使自己對各種不同的名窯有一定程度的了解和認識。
2. 要多觀看可靠的有關古瓷的書籍，比方北京故宮博物館、台北故宮博物館、國內各大博物館、大英博物館包括 Victoria & Albert Museum 等出版的書籍都是很可靠的，反之某些私人出版之藏品書籍亦作參考但質量則有參差。
3. 要到大博物館看實物，比方英國倫敦大英博物館、倫敦大維德基金會（Perceval David Foundation，屬於倫敦大學東方研究中心）、法國巴黎故宮博物館、中國故宮博物館、上海博物館、台北故宮博物館、美國紐約市大都會博物館等都有著很豐富的陶瓷精品，香港尖沙嘴文革中心旁之展覽館亦不時有古瓷展出，讀者可留意，雖然是隔着玻璃看而不是可以上手仔細研究如重量，但用放大鏡檢查釉之特徵，但要對古物之形制有深切之認識乃築鑿瓷之重要基礎，不容忽視。
4. 香港一年兩次Sotheby及Christies都有舉行拍賣，入場看拍賣品都是免費的。有些拍品更是以往名收藏家之藏品，但香港之拍賣主要是明清瓷，高古瓷較少。
5. 當然鑑定是一項實戰，不能只是紙上談兵，要多看實物，不只是真的東西，就算是仿品也要看，特别是高仿，要知道仿品之技巧在不斷進步，有些仿品更令人感到真假難辨。
6. 有過經驗的朋友幫忙，筆者認為這一點甚重要。

中國古瓷之品種很多，五花八門，對收藏家來說選擇很多，有些喜歡高古瓷（明代之前之古瓷）的古樸，而有些則喜愛豔麗的明清瓷。這就等於選美，各花入各眼，沒有一定的標準。至於要決定一件瓷器是否在考慮購買之列，可以從下六點著手：

1. 真：如果造假技藝不能弄清楚或不能肯定，那麼其他的就不用說了！憑任何假貨也要重新評估，有必要考慮科學驗證（thermo luminescence testing）也有幫助。
2. 名氣或否：名牌校校不容忽視，如宋之五大窯及八大窯系，唐三彩，越窯秘色瓷，元青花，明清官窯等，它的升値潛力比其他收藏家之歡迎，物品以之名收藏家所擁有亦甚為重要。
3. 完備程度高：通常明清瓷的要求完美度要高於古瓷。一般來說小瑕疵在小瑕疵的修補是可以接受的，特別是罕見之形制，但大量修補就不盡理想。筆者深信僅稀有物現在或將來都不會失去價值。但如果用假貨來作研究則無不可。
4. 形態是否罕見，很簡單：物以罕為貴。
5. 物件有無裂紋：這一點有一些主觀成分，但一般不會離開釉色，窯口，手工等。
6. 情況是否合理，不要忘記數年前的價錢和現在的價錢不一定是一樣，古瓷是常會升值的。

對於新入門的有興趣收藏者的讀者，我有下列的建議

1. 因為古瓷範圍很大和廣，是一門大學問，要精通於某一朝代的各種品種是非常困難，故在實際上集中研究及專攻一門是比較可行的及適合邏輯，與此同時更可集中火力來收藏精品，收藏家應先花一段時期來發展或找出自己的喜好，
2. 要留意市場情況以及自己的經濟實力，例如一些瓷器品種極少在市場出現，如宋瓷之汝瓷在世上如鳳毛麟角，哥、宋官窰之數亦很少。大部分都是在博物館裏，要收集差不多是不切實際或可行性不高。故此無論財力有多雄厚亦無法實行收藏汝、哥、官窰的夢想。一些明清時代的官瓷動不動要數百萬或千萬，如果要收藏，一兩件就可能要出手，除非財力極其雄厚。

3. 精品的價值上揚較大，就如豪宅一樣，價值長升長有。反之一般的藏品上揚空間通常不及精品，我建議有興趣收藏的讀者要收藏自己欣賞及愛好的品種，不要只是在投資，投資或增值方面著想。也有收藏家花了數年時間收藏，也收藏了不少東西，但卻一件也沒有代表性，藏品也帶不出來，我認為這有些不太理想。

4. 真正的專家靠自己的一對眼睛來分辨東西的真假和優劣，別人的才華無法替别人或專家的介紹，聽專家(特別是沒有利益衝突的)的意見作為參考在某些情況上甚為重要。筆者期望各位讀者可以成為自己有興趣收藏品種的專家。

5. 當事起底難，要成為古瓷專家需要時間，好幾年的先驗，從博物館、書籍、看書，到大買家(Sotheby、Christies)的選購，找到業師好的古董店看讀物，找專家朋友一起研究“班馬”，都是必經之階段，買了錯東西不要灰心，差不多所有收藏家都有“交學費”經驗很多時是由錯誤積累得來的。

6. 這數年明清瓷特別是官窯值價不少，有時處處不勝寒的感覺。筆者特別是家有宋瓷之精品，特別是名窯，認為上升空間較大，現在仍然“抵買”。香港拍賣市場主選中明清官窯瓷，高古瓷則在倫敦和紐約比較多。

7. 隨著中國近年經濟大幅增長，國民的收入大為改善。收藏家的數目也大幅上升，古瓷精品(特別是名窯)愈來愈難求，價格也只有不斷向上，找商譽好的古董商來買，拍賣也是另一途徑。

總之，收藏有時如尋寶，有時遇到了一些忠誠忠假的東西又是一種挑戰，祝各位讀者尋寶成功！
Family Medicine Unit
Department of Medicine
The University of Hong Kong

2007-2008 Part-time Postgraduate Diploma in Community Geriatrics
社區老年醫學深造文憑

- Quotable qualifications by the Medical Council of Hong Kong
- Clinically orientated
- Multiple learning modes
- Clinical teaching at sites across Hong Kong

This programme will help you upgrade your knowledge and skills in the care of the elderly. The Course, developed in conjunction with Hong Kong Geriatrics Society, will use different modes of study: distance learning, interactive workshops and clinical teaching. Flexible teaching hours and multiple clinical teaching sites will allow you to choose the times and places that suit you best.

2007 - 2008 Part-time Postgraduate Diploma in Community Psychological Medicine
社區精神醫學深造文憑

This programme will help you upgrade your knowledge and skills in the care of patients with psychological problems. The Course, organized in conjunction with the Department of Psychiatry, will employ different modes of study: seminars, case discussion, clinical training in psychotherapy and clinical teaching by specialist clinicians at various psychiatric and primary care outpatient clinics and rehabilitation facilities.

The two programmes will commence in September and last for one year on a part-time basis of half a day per week.

Tuition fees for the whole programme are HK$42,000, subject to adjustment in 2007/08.

Closing date for application: 30th April 2007

2007 Certificate Course in Clinical Dermatology 臨床皮膚醫學證書課程

This programme aims to upgrade health care professionals’ knowledge and skills in the care of patients with dermatological problems. The Course, jointly organized by the Family Medicine Unit and Division of Dermatology, consists of 10 weekly seminars conducted by specialists in dermatology between April and June 2007.

Applicants can choose to attend the full Course or individual seminars. Tuition fee for the whole Course is HK$5,000, and for spot admission is HK$700 per session.

Closing date for application: 31st March 2007

Application forms for the above programmes can be downloaded from our website:
www.hku.hk/fmunit/geriatrics
www.hku.hk/fmunit/psychiatry
www.hku.hk/fmunit/dermatology

For further information, please contact Magdalene Tang, part-time Executive Assistant at 2518 5688 (voice mail) or 2814 7475 (fax) or email to magtang@hku.hk. Address: Family Medicine Unit, 3/F, Ap Lei Chau Clinic, 161 Main Street, Ap Lei Chau, Hong Kong.
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**Sunday**
- HKMA Newsletter Editorial Meeting
- Joint Professional Golf Tournament 2007
- Certificate Course on Gynaecology
- Clinical Pathological Conference

**Monday**
- Asian Menopause & Sexual Well Being Survey 
  - Survey Analysis and Management
- HKMA Structured CME Programme Year 2007 (III) - Overactive Bladder
- Certificate Course on Gynaecology

**Tuesday**
- HKMA Newsletter Editorial Meeting
- Certificate Course on Gynaecology
- Certificate Course on Gynaecology
- Clinical Pathological Conference

**Wednesday**
- HKMA Newsletter Editorial Meeting
- Certificate Course on Gynaecology
- Certificate Course on Gynaecology
- Certificate Course on Gynaecology

**Thursday**
- HKMA Council Meeting
- Joint Professional Golf Tournament 2007
- Certificate Course on Gynaecology
- Clinical Pathological Conference

**Friday**
- HKMA Newsletter Editorial Meeting
- Certificate Course on Gynaecology
- Certificate Course on Gynaecology
- Certificate Course on Gynaecology

**Saturday**
- HKMA Council Meeting
- Joint Professional Golf Tournament 2007
- Certificate Course on Gynaecology
- Clinical Pathological Conference

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**THE HONG KONG MEDICAL DIARY**
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<th>Date / Time</th>
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<tr>
<td>8:00 pm</td>
<td>HKMA Council Meeting</td>
<td>Ms. Christine WONG Tel: 2527 9285</td>
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<tr>
<td>7:00 pm - 10:00 pm</td>
<td>Asian Menopause &amp; Sexual Well Being Survey - Sex, QoL at Menopause and Management</td>
<td>Ms. Pansy YU Tel: 2853 6380 1 CME Point (HKCOG, HKFCP, MCHK)</td>
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<td>8:00 pm</td>
<td>HKMA Newsletter Editorial Meeting</td>
<td>Ms. Tammy TAM Tel: 2527 9841</td>
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<td>12:00 pm</td>
<td>Joint Professional Golf Tournament 2007</td>
<td>Ms. Dora HO Tel: 2527 9285</td>
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<tr>
<td>7:30 pm - 8:30 pm</td>
<td>Certificate Course on Gynaecology</td>
<td>Ms. Karen CHU Tel: 2527 8898 Fax: 2865 0345</td>
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<tr>
<td>2:00 pm</td>
<td>HKMA Structured CME Programme with Hong Kong Sanatorium &amp; Hospital Year 2007 (II) - Overactive Bladder</td>
<td>Miss Nina HUNG Tel: 2861 1979 (Registration fee is required) 1 CME Point</td>
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<tr>
<td>2:30 pm</td>
<td>HKMA Refresher Course for Health Care Providers 2006/2007 (VII) - Radiological Investigations and Interventions</td>
<td>Ms. Pansy KO Tel: 2572 8931 Ms. Karen CHU Tel: 2834 2440 2 CME Points</td>
</tr>
<tr>
<td>7:00 pm - 8:30 pm</td>
<td>Clinical Pathological Conference</td>
<td>Ms. Pansy YU Tel: 2572 9285 (Registration fee is required) 3 CME Points</td>
</tr>
<tr>
<td>2:00 pm</td>
<td>Practical Issues on Managing Diabetes</td>
<td>Ms. Pansy YU Tel: 2572 9285 (Registration fee is required) 3 CME Points</td>
</tr>
<tr>
<td>2:00 pm</td>
<td>Hypertension and Diabetics Awareness Program</td>
<td>Ms. Pansy YU Tel: 2572 9285 (Open to public)</td>
</tr>
<tr>
<td>2:00 pm</td>
<td>HKMA Structured CME Programme Year 2007 (XI) - Clinical Oncology &amp; Cardiothoracic Surgery</td>
<td>Miss Nina HUNG Tel: 2861 1979 (Registration fee is required) 3 CME Points</td>
</tr>
<tr>
<td>6:00 pm - 7:30 pm</td>
<td>Clinical Nurse Specialist Group Evening Forum “Managing Urinary Incontinence - Chinese &amp; Western Approaches”</td>
<td>Secretariat Tel: 2572 9255 Fax: 2838 6280</td>
</tr>
<tr>
<td>7:00 pm - 9:30 pm</td>
<td>Enhancement of Bone Health with Milk Basic Protein</td>
<td>Ms Pansy KO Tel: 2529 8931 1 CME Point (HKCOC)</td>
</tr>
</tbody>
</table>

**Courses**

18,19,5/2007  **IOF Osteoporosis Diagnosis Course**
Organised by: The Osteoporosis Society of Hong Kong, The University of Hong Kong (The Osteoporosis Centre & Research Centre of Heart, Brain, Hormone and Healthy Aging) Chairman: Prof. Annie KUNG & F, Old Wing, The Hong Kong Convention & Exhibition Centre Enquiry: Ms. Ciisy SOONG Tel: 2855 4353 Fax: 2855 1701

9,10,11/7/2007  **Definitive Surgical Trauma Care (DSTC) Course**
Organised by: Department of Surgery, Li Ka Shing Faculty of Medicine, University of Hong Kong Medical Centre, Queen Mary Hospital & Hong Kong Chapter of the American College of Surgeons # Skills Development Centre, Department of Surgery, Li Ka Shing Faculty of Medicine, University of Hong Kong Medical Centre, Queen Mary Hospital, Pokfulam, Hong Kong Enquiry: Program Manager Tel: 2855 4885 Fax: 2819 3416 Email: hnsrg@hkucc.hku.hk Website: http://www.hku.hk/surgery

24,25,26/8/2007  **Advanced Trauma Life Support (ATLS) Student Course**
Organised by: Department of Surgery, Li Ka Shing Faculty of Medicine, University of Hong Kong Medical Centre, Queen Mary Hospital & Hong Kong Chapter of the American College of Surgeons # Skills Development Centre, Department of Surgery, Li Ka Shing Faculty of Medicine, University of Hong Kong Medical Centre, Queen Mary Hospital, Pokfulam, Hong Kong Enquiry: Program Manager Tel: 2855 4885 Fax: 2819 3416 Email: hnsrg@hkucc.hku.hk Website: http://www.hku.hk/surgery
Meetings

19-20/5/2007  8th Regional Osteoporosis Conference
Organised by: The Osteoporosis Society of Hong Kong & The University of Hong Kong (The Osteoporosis Centre & Research Centre of Heart, Brain, Hormone & Health Aging) Chairman: Prof. Annie KUNG # 6/F, Old Wing, The Hong Kong Convention & Exhibition Centre Enquiry: Ms. Cassy SOONG Tel: 2855 4353 Fax: 2855 1701

13-17/6/2007  The 21st Congress of International Association of Paediatric Dentistry IAPD
Organised by: Hong Kong Society of Paediatric Dentistry / Hong Kong Convention & Exhibition Centre Enquiry: Mr. Daniel CHOK Tel: 2871 8896 Fax: 2871 8898 Email: info@iapd2007.com Website: http://www.iapd2007.com

12/7/2007  The 1st Nursing Forum
Organised by: Department of Surgery, Li Ka Shing Faculty of Medicine, The University of Hong Kong; American College of Surgeons, Hong Kong Chapter & Department of Nursing Studies, Li Ka Shing Faculty of Medicine, The University of Hong Kong # Underground Lecture Theatre, New Clinical Building, Queen Mary Hospital, Pokfulam, Hong Kong Enquiry: Forum Secretary Tel: 2855 4885 / 2855 4886 Fax: 2819 3416 Email: hksf@hkucc.hku.hk Website: http://www.hku.hk/surgery

12-14/7/2007  The 50th Hong Kong Surgical Forum
Organised by: Department of Surgery, Li Ka Shing Faculty of Medicine, The University of Hong Kong & American College of Surgeons, Hong Kong Chapter # Underground Lecture Theatre, New Clinical Building, Queen Mary Hospital, Pokfulam, Hong Kong Enquiry: Forum Secretary Tel: 2855 4885 / 2855 4886 Fax: 2819 3416 Email: hksf@hkucc.hku.hk Website: http://www.hku.hk/surgery

17-18/11/2007  Annual Scientific Meeting in Anaesthesiology 2007 - Expanding the Boundaries
Organised by: The Hong Kong College of Anaesthesiology & The Society of Anaesthetists of Hong Kong # Hong Kong Convention and Exhibition Centre, Wan Chai, Hong Kong Enquiry: Secretariat (CMPMedica Pacific Limited) Tel: 2559 5888 Fax: 2559 6910 Email: meeting.hk@asia.cmpmedica.com Website: www.hkca.edu.hk/asm2007.htm

Federation News

The new FMSHK Executive Committee

We are pleased to announce the new Office Bearers for 2006-2007:

President: Dr Dawson T.S. Fong
1st Vice President: Dr Chan Chi Kuen
2nd Vice President: Dr Susanna S.C. Lo
Honorary Secretary: Dr Raymond S.K. Lo
Deputy Hon. Secretary: Dr Chan Sai Kwing
Honorary Treasurer: Mr. Nelson L.C. Lam
Deputy Hon. Treasurer: Mr Benjamin C.M. Lee

Executive Committee Members

Dr Godfrey CF Chan  Dr Dominic FH Li
Dr James CS Chim  Ms. Manbo BL Man
Dr Ho Chung Ping  Dr Man Chi Wai
Dr Hung Kwan Ngai  Dr Mok Chun On
Dr Walter WK King  Mr Peter YY To
Dr Albert MP Lee

The Federation’s Annual Dinner 2006

Photographs: Wonderful photographs from our Annual Dinner 2006 are now available for ordering! Please visit our gallery to view and choose http://www.fmshk.org/dinner2006

Questionnaire: Your valuable feedback is important to us for future improvement of the Annual Dinner. Please fill in the questionnaire at http://www.fmshk.org/questionnaire

Please contact the Secretariat, Karen Chu at 2821 3515 or email karen.chu@fmshk.org for enquiries and assistance.

Society News

News from Member Societies:

The Hong Kong Society of Community Medicine
Dr Ronald Lam has been appointed as the society’s council representative effective from 1st January 2007.

Hong Kong Society of Palliative Medicine
New office-bearers for the year 2006-2007 are as follows: Chairman: Dr. WONG Kam Hung, Vice Chairman: Dr YEUNG Mei Wan, Rebecca & Dr. Anne B THORSEN, Hon. Secretary: Dr KWOK Oi Ling, Annie, Hon. Treasurer: Dr YUEN Kwok Keung
Certificate Course on Gynaecology

(Course No. C115)

Jointly organized by
The Federation of Medical Societies of Hong Kong
&
The Obstetrical and Gynaecological Society of Hong Kong

Objective: To learn the recent advances in gynaecology especially on the use of new technology in treating gynaecological diseases

<table>
<thead>
<tr>
<th>DATE</th>
<th>TOPIC</th>
<th>SPEAKER</th>
</tr>
</thead>
<tbody>
<tr>
<td>8 March 2007 (Thur)</td>
<td>Contraception: Current Trend and Update</td>
<td>Dr Grace Wong 王靜妍醫生</td>
</tr>
<tr>
<td>15 March 2007 (Thur)</td>
<td>Update on Urogynaecology</td>
<td>Dr KS Wong 黃建新醫生 Ms B Fung 物理治療師馮潔玉小姐</td>
</tr>
<tr>
<td>21 March 2007 (Wed)</td>
<td>Update on Infertility and Assisted Reproductive Technology</td>
<td>Dr Ernest Ng 吳鴻裕醫生</td>
</tr>
<tr>
<td>29 March 2007 (Thur)</td>
<td>Cervical Smear and Colposcopy</td>
<td>Dr SK Lam 林兆強醫生</td>
</tr>
<tr>
<td>12 April 2007 (Thur)</td>
<td>Common Gynaecological Cancer and Their Treatment</td>
<td>Dr SF Yim 嚴素芬醫生</td>
</tr>
<tr>
<td>19 April 2007 (Thur)</td>
<td>Common Menstrual Problems and Their Management</td>
<td>Dr PM Yuen 阮邦武醫生</td>
</tr>
</tbody>
</table>

Date: March 8, 15, 21, 29 and April 12, 19, 2007
Time: 7:00 p.m. – 8:30 p.m.
Venue: Lecture Hall, 4/F, Duke of Windsor Social Service Building, 15 Hennessy Road, Wanchai, Hong Kong
Course Fee: HK$960 (6 Sessions)
Language: Cantonese (Supplemented with English)
Certificate: Awarded to participants with a minimum attendance of 70%
Enquiry: The Secretariat of the Federation of Medical Societies of Hong Kong
Tel.: 2527 8898 Fax: 2665 0345 Email: info@fmshk.org
CME/CPE Accreditation applied for

For downloading the application form, please refer to our website: http://www.fmshk.org
A New, Oral Agent Proven Effective and Well-tolerated for Use in Symptomatic Patients With Pulmonary Arterial Hypertension (PAH)¹

Revatio™ sildenafil citrate
Start With Confidence

REVATIO is indicated for the treatment of patients with pulmonary arterial hypertension classified as WHO functional class III to improve exercise ability and mean pulmonary arterial pressure. Efficacy has been shown in primary pulmonary hypertension and pulmonary hypertension associated with connective tissue disease.

Sildenafil potentiates the hypotensive effects of nitrates, therefore the concomitant use of REVATIO with nitrates is contraindicated.


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Website: www.pfizer.com.hk