THE HONG KONG 香 港 醫 訊
MEDICAL DIARY
www.fmshk.org
VOL.15 NO.6 JUNE 2010

General Diabetes

OFFICIAL PUBLICATION FOR THE FEDERATION OF MEDICAL SOCIETIES OF HONG KONG ISSN 1812 - 1691

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Dr. Norman N. CHAN
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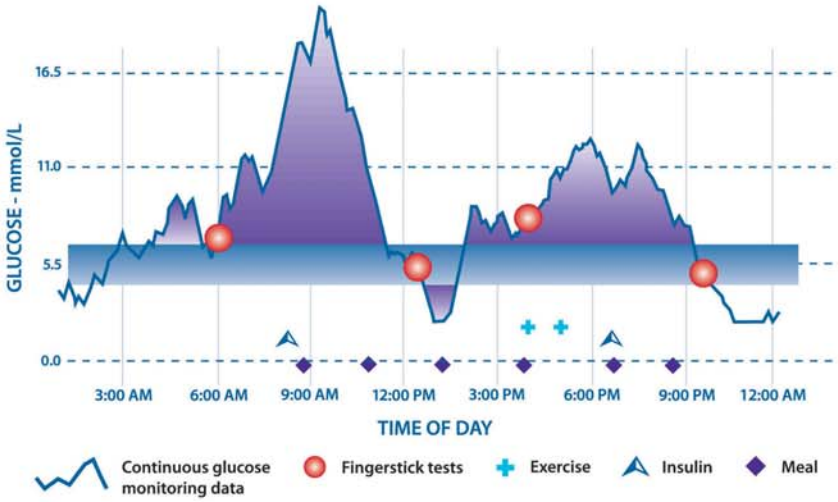

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Optimal Glycaemic Management: Is Reaching HbA1c Target Enough?

Dr. Norman N. CHAN

MD, FRCP
Editor

Dr. Norman N. CHAN

For two decades, glycated haemoglobin (HbA1c) has been regarded as the gold standard for therapeutic target in diabetes management. It was first introduced as a measure of long-term blood glucose control in the early 1980s. The results from the Diabetes Control and Complications Trial (DCCT) studies in 1993[1] gave great emphasis to the role of HbA1c as a surrogate marker for the subsequent development of vascular complications. Indeed, different guidelines had set out similar figures for achieving HbA1c targets (6.5% or 7.0%). However, is HbA1c the most important or useful predictor for cardiovascular disease in diabetes management?

Postprandial Glucose vs HbA1c

Reduction in HbA1c is more beneficial in reducing microvascular than macrovascular complications in type 2 diabetes. In the United Kingdom Prospective Study (UKPDS), the difference in HbA1c achieved between the intensive treatment group and the conventional treatment group was ~1% (7.0% vs 7.9%) over a period of 9 years for type 2 diabetic patients. This improvement in glycaemic control had resulted in significant improvements in microvascular complications but not in macrovascular complications such as myocardial infarction[2]. In the UKPDS study, the most important predictor for myocardial infarction was LDL-c followed by HDL-c, with HbA1c coming third in the order[2]. Furthermore researchers of the ADVANCE trial and ACCORD study failed to demonstrate lowering HbA1c to below 6.0% was associated with reduction of cardiovascular risks[3,4]. In addition, a recent retrospective study of a very large GP database from the United Kingdom involving ~48,000 people with type 2 diabetes showed a U-shape distribution of HbA1c in predicting all-cause mortality[5]. The 10% of patients with the lowest Hba1c values (<6.7%) had a higher death rate than all but the highest top 10% who had a HbA1c of >9.9%[5]. Thus it would appear that too high or too low an HbA1c is harmful in people with type 2 diabetes. To add weight to this discussion, there is strong evidence from both Caucasian and Chinese populations that many individuals (not previously known to have dysglycaemia) who suffered from acute coronary syndrome had fairly normal HbA1c and it was the postprandial glucose (PPG) that was high (in those with impaired glucose tolerance)[6,7]. This can only be determined by an oral glucose tolerance test. Indeed, PPG is much more important than HbA1c or fasting glucose as a predictor for CVD from many epidemiological studies[8,9]. Evidence is also growing from interventional studies[10].

Glucose Variability

What HbA1c does not take into account is the glycaemic variability. For instance, an individual with acceptable HbA1c may have significant glycaemic variability (see figure 1). There is now cumulative evidence to indicate that glycaemic variability is an independent risk factor for complications in type 1[1,11] and type 2

diabetes[12]. At the level of basic science, glucose variability is detrimental to cellular health. An experimental study showed that there was more apoptosis (cell death) when human endothelial cells were cultivated in fluctuating glucose concentrations than those in solutions with chronic hyperglycaemia[13]. It is very likely that an increased magnitude of glucose variability generates reactive oxygen species in complications-prone cells as a result of hyperglycaemia-induced oxidative stress[14,15]. This could be a major mechanism to explain glucose-mediated vascular damage. In addition, increased post-prandial glucose increased LDL oxidation[16], an important process in atherogenesis. A clinical trial had also confirmed that acute glucose fluctuations exerted a more specific triggering effect on oxidative stress than chronic sustained hyperglycaemia[17]. Optimal glycaemic control should include minimising glucose variability in reducing vascular complications in the management of diabetes.

Role of Continuous Glucose Monitoring

Given the importance of PPG and glucose variability, modern management in diabetes should include the assessment of glucose variability. Currently diabetes management software is available that synthesises data uploaded from blood glucose meters and to calculate the standard deviation of blood glucose values to ascertain the quality of diabetes control. It will also allow physicians to fine tune anti-diabetic oral therapies or insulin therapy leading to minimal glycaemic variability and to reach HbA1c target. This is particularly beneficial to patients on multiple insulin injections to minimise severe hypoglycaemic episodes yet achieving quality glycaemic control.

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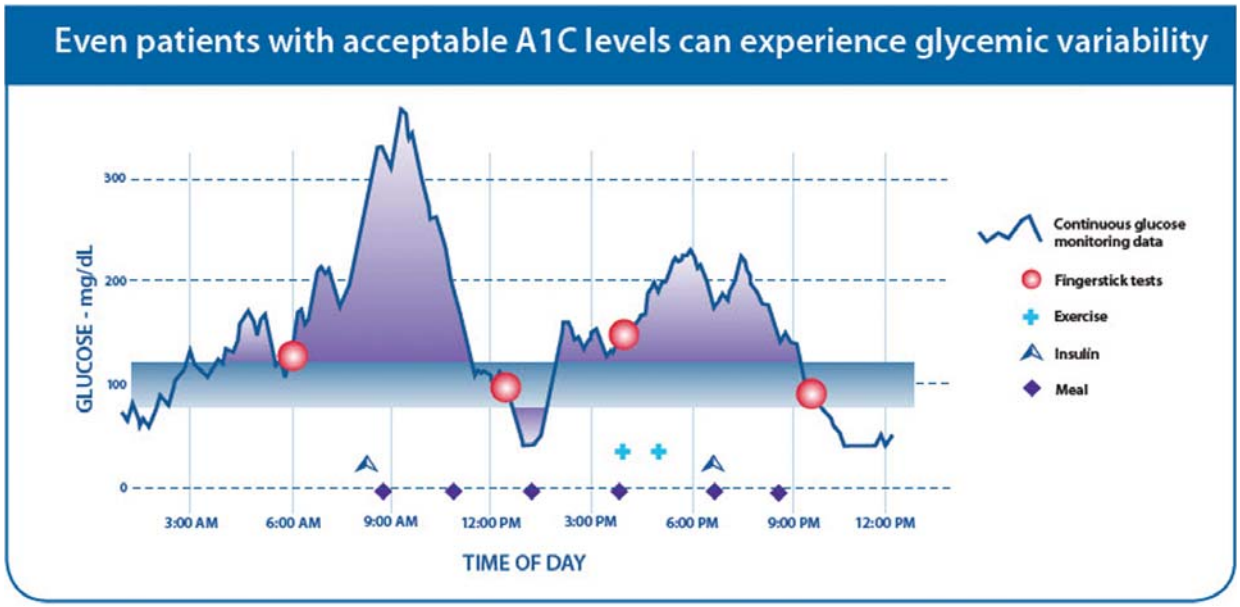
Figure 1



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CHD

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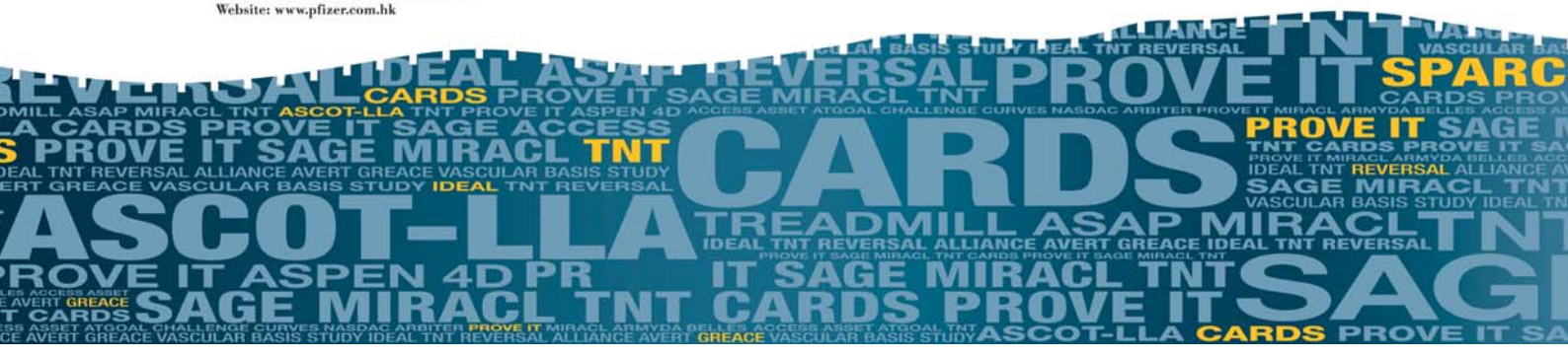

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An Update on HDL Management

Dr. Albert Wai-suen LEUNG

MBBS(HK), MRCP(UK), FHKAM(Med), FHKCP, FRCP(Edin), FRCP(Glasg)
Private Cardiologist

Dr. Albert Wai-suen LEUNG

This article has been selected by the Editorial Board of the Hong Kong Medical Diary for participants in the CME programme of the Medical Council of Hong Kong (MCHK) to complete the following self-assessment questions in order to be awarded one CME credit under the programme upon returning the completed answer sheet to the Federation Secretariat on or before 30 June 2010.

HDL and Coronary Artery Disease

In the last 3 decades, the finding of the connection between plasma cholesterol level and atherosclerotic cardiovascular (CV) events is one of the best described chapters in modern medicine. A strong and positive relationship between LDL-C concentration and CV events has been confirmed in many large-scale population studies, while the benefit of reducing LDL-C level has been proven in many intervention studies. Yet, it becomes apparent that despite effective LDL-C lowering, the residual risk in many patients remains unacceptably high (Table 1). One important element is the low HDL-C level. Many population studies such as the Framingham Heart Study[1] and PROCAM study showed that HDL-C levels <35mg/dL (0.91 mmol/L) corresponded to a much higher coronary risk, independent of LDL-C levels, when compared to subjects with higher HDL-C levels. A short summary from these studies is that for every 1 mg/dL (0.025mmol/L) increase in HDL-C, the risk of having a coronary event is reduced by 2-5%. The increased coronary risk associated with a low HDL-C level is apparent at all concentrations of LDL-C. This predictive power has been found in nearly every population study. The argument that a low HDL-C level is simply the reflection of some other factors is no longer sustained. Rather, there is compelling evidence that a low HDL-C level is a predictor of coronary disease independent of LDL-C, plasma triglyceride (TG), body weight or diabetes. Therefore, raising HDL-C levels should be considered a therapeutic target. However, this remains a secondary goal in most guidelines, including the commonly quoted National Cholesterol Education Program (NCEP) guidelines of the US[2]. In part, this reflects the paucity of therapeutic options available for raising HDL. The condition will get worse, since we are facing an escalating worldwide epidemic of low HDL states such as type 2 diabetes and the metabolic syndrome. The time of better managing HDL has arrived. This article serves to briefly describe what HDL is, and when and how to intervene.

Metabolism and Function of HDL

HDLs are the smallest and densest of the plasma lipoproteins (LPs). HDLs circulating in plasma comprise a number of sub-populations that vary in shape, size, density and apolipoprotein composition[3].

The main apolipoprotein of HDL is apoA-I, accounting for 70% of all HDL proteins. The second most abundant protein is ApoA-II (20%), the main function of which is unknown or for particle stability. Many other minor apolipoproteins also exist.

Table 1: Residual risk of major statin trials

Trial name	Trial type	Drug	% of event reduction	% of persons in treatment arm that end up with CV event
4S	2º Prevention High LDL-C case	Simvastatin	34	19.4
LIPID	2º Prevention Average LDL-C case	Pravastatin	24	12.3
HPS	1º& 2º Prevention High risk case	Simvastatin	25	8.7
AFCAPS/ TexCAPS	1º Prevention Low LDL-C case	Lovastatin	25	6.8
PROVE IT	2º Prevention Intensive vs standard	Atorvastatin 80 Pravastatin 40	15	22.4
TNT	2º Prevention Intensive vs standard	Atorvastatin 80 Atorvastatin 10	21	8.7

As a start, ApoA-I is secreted from the liver in a lipid-poor form. Once in the plasma it rapidly acquires lipid constituents (phospholipids and cholesterol) to form a discoidal HDL. The cholesterol is then esterified by lecithin-cholesterol acyl transferase (LCAT) into cholesterol ester (CE). CE moves inside the particle to form a lipid core that helps to transform the HDL into a spherical shape, which is the predominant form in plasma[4]. (Figure 1)

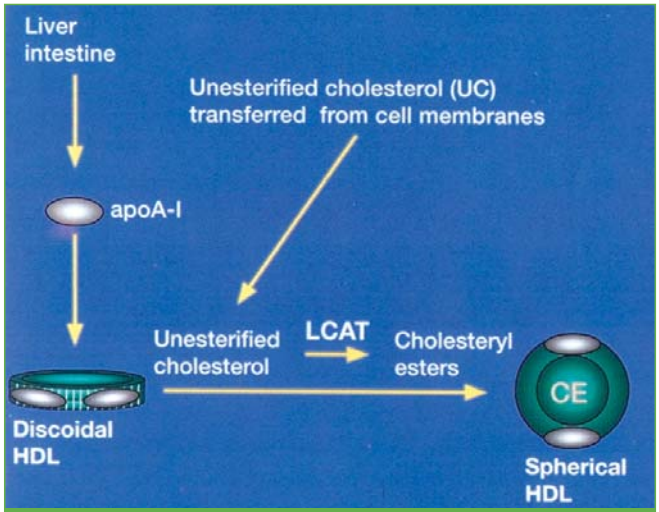

Figure 1: Formation of spherical HDL from apoA-I (adapted from Barter. Atherosclerosis Supplements 2002; 3:39-47)

A spherical HDL is subjected to remodelling into a larger particle by cholesterol ester transfer protein (CETP), the net effect being a transfer of CE from HDL to TG-rich LP (e.g. VLDL) in exchange for TG that is transferred from TG-rich LP to HDL (Figure 2). A spherical HDL is also subjected to size reduction by depleting it of its core CE and TG, together with the loss of a proportion of apoA-I.

Hepatic cholesterol (from diet or by own synthesis) and TG are incorporated into VLDL which is secreted into the plasma where TG is broken down and taken up by tissues. As it loses TG, VLDL becomes smaller and, in a complex series of reactions, is converted into cholesterol-rich LDL particle. Cholesterol in LDL is delivered to tissue cells following binding of LDL to LDL receptors. This is how cholesterol is transported from liver to cell. On the contrary, how cholesterol is transported from cell to liver is called the reverse cholesterol transport. In this process, efflux of cholesterol from cell is through acceptance of cholesterol into HDL, which is done through active (involving a variety of enzymes) and passive processes. Once in HDL, cholesterol is delivered directly or indirectly (involving CETP action to form VLDL/LDL) to the liver. (Figure 2)

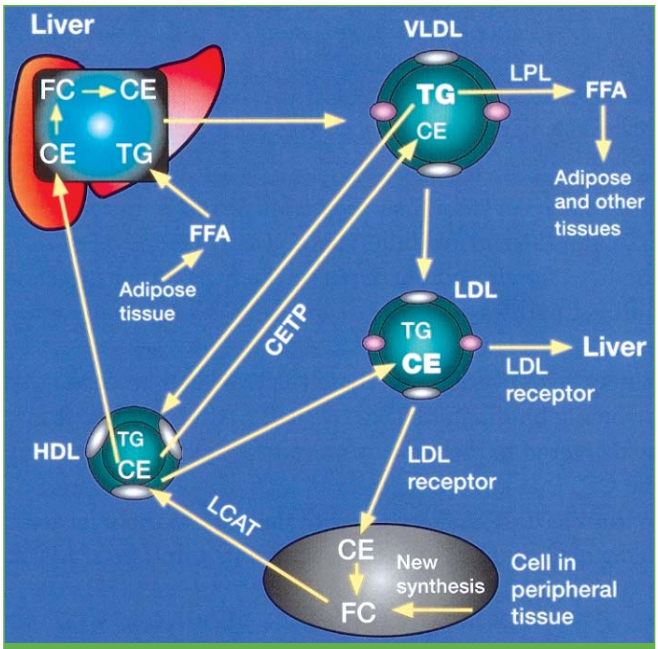

Figure 2: Overview of plasma cholesterol transport and HDL metabolism (adapted from Barter. Arteriosclerosis. Thrombosis & Vascular Biology 2003; 23: 160-7)

In addition to this well-known role, HDL also has a number of non-lipid anti-atherogenic properties (Table 2)[5]. Is there direct evidence that raising HDL-C is beneficial? Yes. HDL promotes regression of atherosclerosis in animals. In humans, it has to be accepted that most intervention studies were not designed to test the benefits of HDL raising. In one small human study, IV infusion of reconstituted HDL over a period of 5 weeks promoted a significant reduction in coronary plaque burden[6].

Table 2: Function of HDL

Reverse cholesterol transport function: Deliver cholesterol from extra-hepatic tissues to the liver for recycling or for elimination from the body in bile
Non-lipid functions: anti-oxidation (inhibit oxidation of LDL) anti-inflammation (inhibit expression of endothelial cell adhesion molecules) anti-thrombosis (inhibit expression of pro-thrombotic tissue factor) endothelial stabilisation (reduce endothelial dysfunction by generation of nitric oxide) endothelial repair (promote repair of damaged endothelium)

What Causes Low HDL-C in Humans?

Type 2 diabetes (T2DM) and the metabolic syndrome (MS) are the 2 most important causes of low HDL-C levels. MS is a cluster of abnormalities including central obesity, insulin resistance, dyslipidaemia, hypertension and a pro-inflammatory state. The relationship of MS to T2DM is not clear yet, but some consider MS as a pre-diabetic state. The increasing prevalence of T2DM and MS in both the developed and the developing countries has created a global epidemic. There is therefore a speculation that low HDL-C associated with T2DM and MS will contribute increasingly and remarkably in atherosclerosis related diseases in the coming future. Less common causes of low HDL-C include genetic conditions (e.g. deficiencies of HDL apolipoproteins, LCAT deficiency) and other dyslipidaemic states (e.g. familial hypertriglyceridaemia, familial combined hyperlipidaemia).

T2DM and MS cause low HDL-C levels through an increased rate of HDL catabolism[7,8]. The origin is an increase in concentration of TG-rich LPs. This leads to an increase in the transfer of CE from HDLs to the TG-rich LPs in exchange for TG. The process generates HDLs that are enriched in TG, which provides HDLs with the preferred substrate for hepatic lipase. The subsequent hydrolysis leads to size reduction of HDLs, earmarking the characteristic of an increased sub-fraction of small dense HDL particles (called HDL3) in T2DM and MS. During the process, apoA-I is dissociated from the HDL surface and excreted through the kidneys.

Lifestyle Management

Both dietary fat (especially saturated fat) and dietary cholesterol increase HDL-C levels, but the precise mechanism is largely unknown, nor is it known whether this kind of increase in HDL-C levels is beneficial. However, it must be emphasised that any benefits arising from an increase in HDL-C may be more than outweighed by the detrimental effects of an accompanying increase in cholesterol in LDL fractions.

Weight reduction is accompanied by an increase in HDL-C level, although the weight loss needs to be substantial and sustained. The mechanism is probably related to the positive effects in the management of MS.

Aerobic exercise is associated with higher levels of HDL-C. There is evidence that exercise stimulates lipoprotein lipase activity. A recent meta-analysis has confirmed the benefit of regular aerobic exercises on raising HDL-C levels. The increase is apparent only in those who exercised for at least 120 minutes per week[9].

Alcohol consumption increases HDL-C levels, the precise mechanism being unknown. Smoking reduces HDL-C concentration, while smoking cessation is associated with an up to 10% increase in HDL-C levels.

Fibrates

Fibrates increase HDL-C by 20%, and also lower plasma TG by up to 50%. They work by activating peroxisome

proliferator-activated receptor α (PPARα), a kind of hormone-activated nuclear receptor, which increases the synthesis of apoA-I, lipoprotein lipase, and other factors. The net effect is not only an elevation in HDL-C levels, but also an increase in reverse cholesterol transport. Fibrates are generally well tolerated. Adverse effects are mainly mild and transient gastrointestinal disturbances, slight increase in risk of gallstones, small increase in risk of pancreatitis, and small increase in plasma homocysteine. Myositis is a rare adverse effect, but this tends to occur more with gemfibrozil than with other fibrates and even then only when it is co-administered with a statin.

There have been several clinical trials investigating the effects of fibrates on hard endpoints. 3 of them showed statistical reduction of coronary events when compared to placebo (WHO clofibrate study, Helsinki Heart Study, VA-HIT). An interesting additional finding in the VA-HIT study was a significant reduction in strokes in the gemfibrozil group. In the WHO clofibrate study, there was a small but significant excess of non-coronary deaths in the treatment group. Subsequent re-analysis of the data on the 'intention-to-treat' basis showed that the increase was not significant. Trials with other fibrates have not observed an excess of non-coronary deaths[10].

The FIELD study was the biggest trial of fibrates in T2DM patients[11]. Some of the results were unexpected and remained unexplained. First, the effect of fenofibrate on HDL-C levels was less than predicted (<2% difference between the 2 groups). This may be one of the reasons why there was no significant reduction in the primary endpoint, though there were positive outcomes with regard to some secondary endpoints, such as reduction in total CV events, reduction in coronary revascularisation, reduction in albuminuria progression and a lower rate of laser treatment for retinopathy. Second, the intake of statins was much greater in the placebo group (17%) than in the fenofibrate group (8%). This might explain to some extent the 'good' outcome in the placebo group and the small difference between the 2 groups.

The subgroup analyses of the above trials suggest that the CV benefits of treatment with fibrates are greatest in those with lower HDL-C levels at baseline (<1.0 mmol/L in men and <1.3 mmol/L in women), and in those with features of MS.

Niacin

Niacin (nicotinic acid) increases HDL-C by up to 30%, lowers TG by 40-50%, and lowers LDL-C by up to 30%. The precise mechanism of the HDL raising effects of niacin is unknown, but may be related to its TG lowering ability, thus reducing the transfer of CE from HDLs to TG-rich LPs. Until recently its therapeutic value has been limited by side effects, which point mainly to unpleasant episodes of flushing and itching, while dizziness, palpitations and shortness of breath are also common. Flushing and itching are frequent (>80%) in the earlier formulations, and persist in a substantial proportion. The extended-release formulation (such as niaspan) has a better profile[12]. The frequency and severity of flushing can be further reduced by initiating therapy with low doses (375 or 500 mg) and slowly titrating up over several weeks (1 or 2 gm). Intake of drug before sleep or 30 minutes after aspirin further reduces flushing. A new approach involves the co-administration of an extended-release formulation of niacin with a new drug named laropiprant, the latter being a selective antagonist of prostaglandin D receptor subtype 1 that mediates niacin-induced vasodilatation in skin. The first co-administration formula, tredaptive, has shown a further reduction in flushing even with a 1 gm starting dose[13].

Coronary Drug Project was an early clinical study (niacin vs placebo) in MI patients. Major coronary events (6.5 year follow-up data) and total mortality (15 year follow-up data) were significantly reduced. In another early study, Stockholm IHD Secondary Prevention Study, again on MI patients, niacin+clofibrate group demonstrated marked reduction in both total and coronary mortality. However, the relationship of benefits to HDL raising was not reported in both trials. 2 more recent studies focused more on the HDL raising effects of niacin-simvastatin combination (HATS: angiographic study) and niaspan added to background statin (ARBITER2&3: carotid intima-media thickness (CIMT) study). All have statistically significant results.

Statins and Combination

Statins have a HDL raising effect, in the order of 5-10%. Most of the increase in HDL-C is achieved at relatively low doses of statins, and so stepping up statin doses has not much gain. In the case of atorvastatin, HDL-C falls off at higher doses, the reason of which is not known. The suggested mechanisms of statins include increased synthesis of apoA-I by activating PPARα, and inhibition of CETP. Many published studies with statins pointed out that most of the benefits were related to LDL-C reductions. Any additional risk reduction achieved by HDL-C elevation with statins alone should be viewed as a bonus. Moreover, a low baseline HDL-C remains predictive of coronary events even in patients treated with statins, indicating that such treatment does not eliminate the risk associated with a low HDL.

That is why the up-coming trend is to look for the benefits of simultaneously raising HDL-C and lowering LDL-C. The lately published ARBITER6-HALTS trial has shed light on this aspect[14]. It was a small scale study that compared niaspan+simvastatin against ezetimibe+simvastatin regarding CIMT change. The study was terminated early after an interim analysis showed a statistically significant regression of CIMT in the niaspan+simvastatin group. This supported the concept that combining HDL raising and LDL lowering is more important than more aggressive LDL lowering. However, this study received great criticism in the decision of the premature termination and the method of analysis. We may therefore need to wait for the results of on-going big clinical trials such as AIM-HIGH (niaspan+simvastatin vs simvastatin) and HPS2-THRIVE (tredaptive+simvastatin+/-ezetimibe vs simvastatin+/-ezetimibe).

CETP Inhibitors

CETP promotes transfer of cholesterol from the protective HDL to atherogenic VLDL/LDL. Torcetrapib, a CETP inhibitor, has been developed and tested in humans. It increases HDL-C by >50% and decreases LDL-C by 20%. However, in the ILLUMINATE trial that was designed to investigate possible cardioprotective effects of torcetrapib, there was an early termination because of excess of deaths in the treatment group[15]. The explanation for the excess mortality is currently not known, but three imaging trials (coronary ultrasound or CIMT) using the same drug showed no evidence of harm (increased mortality) or benefits (plaque regression). The future prospect depends on whether other CETP inhibitors also show poor results as torcetrapib, or whether an off-target adverse effect of torcetrapib can be established and its mechanism understood.

Summary

As summary, a table (Table 3) is given here concerning practical issues in the management of low HDL-C levels.

Table 3: Summary of HDL management

Most guidelines define low HDL-C as: <40mg/dL (1.03 mmol/L) in men <45 mg/dL (1.16 mmol/L) in women
A decision to initiate drug should be based on global risk and not simply on HDL-C levels
No particular level of HDL-C is recommended as target of therapy at present
Lifestyle measures should be recommended in all people with low HDL-C
Fibrates are recommended when low HDL is present as a component of T2DM or MS
Statins reduce CV risk in all patients but most of the benefit is LDL-lowering rather than HDL-raising
Niacin is the most effective HDL-raising drug and should be considered in high risk subjects with low HDL-C
Combination therapy with a statin and fibrate should be considered in high risk people with MS or T2DM
Combination therapy with a fibrate (especially gemfibrozil) and a statin is associated with a small but significant increase in risk of myositis
Combination therapy with a statin and niacin (in extended-release formulation) should be considered in people in whom a low HDL-C is not corrected by statin monotherapy

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MCHK CME Programme Self-assessment Questions

Please read the article entitled "An Update on HDL Management" by Dr. Albert Wai-suen LEUNG 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 30 June 2010. Answers to questions will be provided in the next issue of The Hong Kong Medical Diary.

Questions 1-10: Please answer T (true) or F (false)

1. There is no adequate evidence that low HDL-C level is an independent predictor of coronary artery disease.
2. The most common apoliporotein of HDL is apoA-I rather than apoA-II.
3. Cholesterol ester transfer protein (CETP) is an important factor for the esterification of cholesterol inside the HDL molecule.
4. There is so far no direct evidence in human studies that raising HDL-C promotes regression of atherosclerotic plaque.
5. Weight reduction, aerobic exercise, alcohol consumption and smoking cessation can all increase HDL-C levels.
6. There were several clinical trials on fibrates that showed statistical reduction of coronary events when compared to placebo.
7. The FIELD study was the biggest trial of fibrates in T2DM patients.
8. Apart from flushing and itching, headache, general malaise and chills are more common side effects of niacin.
9. Reduction in total mortality has never been demonstrated in clinical studies on niacin or niacin/fibrate combination when compared to placebo.
10. ARBITER6-HALTS study supported the concept that combining HDL raising and LDL lowering is more important than more aggressive LDL lowering.

ANSWER SHEET FOR JUNE 2010

Please return the completed answer sheet to the Federation Secretariat on or before 30 June 2010 for documentation. 1 CME point will be awarded for answering the MCHK CME programme (for non-specialists) self-assessment questions.

An Update on HDL Management

Dr. Albert Wai-suen LEUNG

MBBS(HK), MRCP(UK), FHKAM(Med), FHKCP, FRCP(Edin), FRCP(Glasg)
Private Cardiologist

1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7 ☐ 8 ☐ 9 ☐ 10 ☐

Name (block letters):_____ HKMA No.: _____

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Contact Tel No.:_____ DCHK No.: _____

Answers to May 2010 Issue

The Clinical Spectrum and Diagnosis of Psoriatic Arthropathy

1. a 2. c 3. d 4. a 5. c 6. d 7. b 8. d 9. a 10. c

Post-prandial Hyperglycaemia & Cardiovascular Disease: An Endocrinologist's Perspective

Dr. Peter TONG

Department of Medicine & Therapeutics, the Chinese University of Hong Kong, Prince of Wales Hospital

Dr. Peter TONG

There is now a global epidemic of diabetes and obesity affecting more than 300 million people worldwide with Asia in the forefront. These silent conditions independently and collectively contribute to 50% of all causes of death mainly due to cardiovascular and renal complications. The major burden of diabetes is from the treatment costs of its complications, such as stroke, blindness, coronary artery disease, renal failure, amputation and infection. Diabetes is associated with approximately 2-fold increased mortality in most populations, with the risks decreasing with increasing age[1-4]. Cardiovascular disease is 76% more prevalent in subjects with diabetes. In particular, the prevalences of acute myocardial infarction and congestive heart failure are high in these subjects[5]. It is well established that the occurrence of vascular complications of diabetes is related to the duration of hyperglycaemia. With the earlier onset of type 2 diabetes, most patients will have increased risks of developing these devastating complications.

The UK Prospective Diabetes Study (UKPDS) showed that the lowering of fasting plasma glucose levels was associated with significant reductions in microvascular complications. However, such interventions were less effective in reducing the risk of macrovascular complications. In contrast, population studies showed that postprandial hyperglycaemia was a risk factor for cardiovascular and all-cause mortality in different ethnic groups[6-9]. Importantly, postprandial glucose levels were more strongly associated with all-cause mortality and cardiovascular risks than fasting glucose values[10]. The DECODE analysis demonstrated that 2-hour post-challenge plasma glucose correlated with the risks of all-cause and cardiovascular mortality. There was a stepwise increasing relationship between the hazard ratio for mortality for cardiovascular disease and 2-hour plasma glucose, but not fasting plasma glucose levels 2. In a similar analysis of more than 6000 subjects in Asia (DECODA), the risks of both all-cause and CVD mortality significantly increased with increasing 2-hour post-challenge plasma glucose levels. In contrast, there was no difference in the risk of mortality with increasing fasting plasma glucose values[11].

Despite the strong relationship between abnormal glucose levels and cardiovascular risks, the prevalence of dysglycaemia in subjects with coronary artery disease (CAD) was not well documented. Of 4961 patients with CAD in the Europe Heart Survey, 31% were known suffering from type 2 diabetes. Following assessment by oral glucose tolerance test (OGTT) in the remaining patients, a further 21% had impaired fasting glucose (2%), impaired glucose tolerance (12%) or newly diagnosed type 2 diabetes (7%) 12. In the Glucose Tolerance in Patients with Acute Myocardial Infarction (GAMI) Study, 66% of subjects with no history of diabetes had dysglycaemia at discharge from hospital[13]. In the China Heart Survey, 33% of 3513 patients with CAD had type 2 diabetes at enrollment. Based on fasting plasma glucose values, 3% had newly diagnosed type 2 diabetes. Following OGTT in the remaining patients, 17% were found suffering from newly diagnosed diabetes and 24% had impaired glucose tolerance. Taken together, 77% of Chinese patients with CAD had abnormal glucose tolerance[14].

These epidemiological studies suggested a close link between post-prandial hyperglycemia and CAD. Several underlying mechanisms have been proposed to be involved in hyperglycaemia-induced vascular damage. These include activation of protein kinase C signalling pathway, oxidative stress and glycosylation of protein. The increase in free radicals from oxidative stress and the up-regulation of genes cause an increase in the proliferation of smooth muscle cells, the expression of adhesion molecules and growth factors. These changes lead to endothelial dysfunction with increased vessel wall thickness, vascular permeability and loss of elasticity[15-17]. Hence, glucotoxicity plays a key part in the development of generalised vascular dysfunction leading to retinopathy, albuminuria and accelerated atherosclerosis.

Among individuals with glucose intolerance, reducing the cardiovascular risks is a major unmet need. There is significant increase in the risks of cardiovascular morbidity and mortality in subjects in early stages of diabetes. To reduce macrovascular complications, both fasting and postprandial hyperglycaemia should be targeted. Interventions that focused on lowering fasting plasma glucose may not offer optimal risk reduction in cardiovascular complications. There are now therapeutic options available to address the issue of post-prandial hyperglycaemia. Pharmacological agents that specifically target post-prandial glucose include α-glucosidase inhibitors, glinides (rapid-acting insulin secretagogues) and insulin. New classes of therapies (glucagon-like peptide-1 [GLP-1] derivatives, dipeptidyl peptidase-4 [DPP-4] inhibitors) which address deficiencies in pancreatic and gut hormones also have beneficial effects on controlling post-prandial hyperglycaemia. Regarding the targets for post-prandial glycaemic control, the International Diabetes Federation recommended that 2-hour post-meal plasma glucose level of < 7.8 mmol/L using the self-monitoring of blood glucose approach[18].

In conclusion, abnormal glucose tolerance is common among patients with coronary heart disease, but is often undiagnosed. Using the oral glucose tolerance test, the Euro Heart Survey and the China Heart Survey showed that nearly three-quarters of these patients had dysglycaemia, with one-third of these patients known to have type 2 diabetes. Postprandial hyperglycaemia contributes to increased cardiovascular risk. Efforts should be made to identify at risk subjects with oral glucose tolerance test, and to manage these high risk subjects with lifestyle modifications and appropriate pharmacologic therapy.

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Diploma in Child Health Examination (DCH) 2010

The Hong Kong College of Paediatricians (HKCPaed) and the Royal College of Paediatrics and Child Health (RCPCH) will hold a Joint Diploma in Child Health Examination in Hong Kong in 2010 awarding DCH (HK) and DCH (International) to successful candidates.

The Examination is divided into two parts, Written (MRCPCH Pt IA) and Clinical. The MRCPCH Part 1A Examination is held three times a year in Hong Kong. The next MRCPCH Part 1A Examination will be held on **Tuesday, 7 September 2010.** The examination fee is **HK$4,250** for Part IA. Candidates who wish to enter the examination must hold a recognized medical qualification in Hong Kong.

Application: Candidates who wish to sit the examination in Hong Kong **MUST** apply through the Hong Kong College of Paediatricians (HKCPaed). For application details, please visit the HKCPaed website at www.paediatrician.org.hk/entcnews.htm or call the College Secretariat at 28718871.

Deadline for Application: Friday, 11 June 2010

Important Notice

New Clinical Examination for DCH from March 2006

A new format of the DCH clinical examination has been adopted since March 2006. Details of the new format and other relevant information can be viewed on the RCPCH website at: www.rcpch.ac.uk

Cardiovascular Disease & Post-prandial Hyperglycaemia: A Cardiologist's Perspective

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Dr. Godwin TC LEUNG

A 45 year-old man had an acute myocardial infarction and received urgent percutaneous coronary angioplasty with stenting to his left anterior descending artery. He had no family history of coronary artery disease. He was a non-smoker with no known history of hypertension. His LDL was 2.6 mmol/L and fasting glucose was 5.1 mmol/L. His body mass index was 23.6. New cardiovascular risk factors including hsCRP, homocysteine and Lp(a) were also normal. The patient kept on asking his cardiologist what was the contributing factor of his heart attack. The cardiologist could not give him a good explanation until he ordered an oral glucose tolerance test (OGTT) which showed that the patient had impaired glucose tolerance (IGT) with postprandial hyperglycaemia (PPHG); his fasting glucose was 5.6 mmol/l but the 2 hr pp glucose was 10.8 mmol/l. (Normal range <7.8 mmol/L).

Postprandial Hyperglycaemia and Cardiovascular Disease Risk

PPHG contributes to the development of cardiovascular disease (CVD). The damaging effects of PPHG on the cardiovascular system occur even in the nondiabetic range. A significant proportion of dysglycaemic individuals develop vascular damage during the prediabetes stage. Numerous epidemiological studies had demonstrated a strong correlation between PPHG and CV mortality[1]. In a meta-analysis of 38 studies of nondiabetic subjects, the group with the highest postprandial blood glucose level (8.3-10.8mmol/l) had a 27 percent greater CVD risk than the group with the lowest level (3.8-5.9 mmol/l)[3]. Postprandial glucose may be a better predictor of CVD than fasting glucose in several Asian populations[2]. PPHG can now be considered an independent risk factor for CVD even prior to the development of diabetes. A number of experimental studies have also demonstrated the pro-atherogenic role of postprandial glycaemic peaks. Studies have consistently demonstrated the glucotoxic effects of PPHG on blood vessels. PPHG induces oxidative stress[4], induces endothelial dysfunction and attenuates flow-mediated vessel dilatation[5], increases carotid intima-media thickness[6] and increases the production of inflammatory cytokines[7]. International guidelines now recognise the link between PPHG and CVD, and highlight the need for integrated management of these conditions. There is an emphasis on identifying and controlling PPHG to reduce the risk of CVD.

Abnormal Glucose Metabolism in Patients with Coronary Artery Disease

The Euro Heart Survey collected data on European patients (n=3,444) with acute or stable coronary artery disease. Approximately one third of them (n=1.524) had known type 2 diabetes mellitus (T2DM) at study start. OGTT was performed in patients without known T2DM and revealed that fewer than half of those tested had normoglycaemia, 37% had IGT and 18% newly diagnosed T2DM[8]. The China Heart Survey, similar to the design of the Euro Heart Survey, enrolled 3,513 Chinese patients with coronary artery disease. T2DM was known to be present in about one third of patients. Among the remaining 2,263 patients, OGTT diagnosed T2DM in 27% and prediabetes in another 37%[9]. Together, the Euro and China Heart Surveys provided strong and universal evidence of a high prevalence of abnormal glucose metabolism among patients with CV disease, highlighting the need to improve strategies for glucometabolic screening and management.

Detecting Abnormal Glucose Metabolism in Patients with Cardiovascular Disease

A high proportion of patients with CVD have impaired glucose metabolism or PPHG which are often under-diagnosed. This condition often remains undiagnosed until a serious CV complication exposes the disease. Most physicians including cardiologists rely mainly on fasting glucose to diagnose abnormal glucose metabolism. A diagnosis based on fasting glucose alone would under-diagnose the prevalence of abnormal glucose metabolism in patients with coronary artery disease. The Euro Heart Survey reported that two-thirds of patients with positive OGTT would have remained undiagnosed if only fasting plasma glucose levels had been considered.[10]

International guidelines recommend that all patients with CVD should be tested by OGTT if their glucometabolic condition is not already known[11]. Routine use of OGTT in the cardiology setting is a simple, cost-effective approach to improve the detection and management of glucometabolic abnormalities in patients with CVD.

Secondary Prevention for Patients with CVD and PPHG

Early institution of glucose-lowering therapy has been shown to be beneficial in patients with CAD and newly diagnosed T2DM by the Euro Heart Survey on Diabetes and the Heart[12]. Among patients with newly diagnosed T2DM who started on glucose-lowering drugs, none of these patients died during the first year follow-up but there were 25 deaths among those who did not receive such treatment. Among CV patients with IGT or PPHG, early institution of glucose-lowering therapy may also be beneficial apart from patient education and lifestyle counselling. So far, only one oral drug has been approved for the treatment of prediabetes and PPHG, the α-glucosidase inhibitor acarbose. Acarbose delays the absorption of carbohydrates from the gastrointestinal tract and lowers postprandial plasma glucose levels which is important for the atherogenic process. Results from the STOP-NIDDM study analysis indicated that the use of acarbose in subjects with IGT not only reduced glucose levels and delayed the onset of T2DM, but also provided benefits in CVD protection. In STOP-NIDDM, acarbose reduced the risk of CV events by 49% including a 91% reduction in the risk of clinical myocardial infarction in patients with IGT[13]. In addition, in a subgroup analysis of these patients after an average time of 3.9 years, acarbose was also shown to slow the progression of carotid intima-media thickness[14]. To assess the efficacy of acarbose in the secondary prevention of CV events among Asian patients with IGT and established CVD, the ACE (Acarbose Cardiovascular Evaluation) study has been started in multiples sites in China Mainland and Hong Kong. This is a randomised, placebo-controlled trial that investigates the effects of acarbose, with secondary prevention of cardiovascular morbidity and mortality as a primary end point. It will follow approximately 7,500 patients for a minimum of four years. There will be major implications on public health in Asia if the results are positive.

Conclusion

PPHG plays a pivotal role in the pathogenesis of CVD and is often neglected in clinical practice. Studies have provided cumulative evidence of high prevalence of PPHG in patients with CVD. Use of OGTT improves the diagnosis of abnormal glucose metabolism and PPHG in patients with CVD. Postprandial glucose should now be a therapeutic target to minimise CVD risks. Appropriate treatment may reduce the risk of further CV events in patients with established CVD. Collaboration between cardiologists and diabetologists is essential to achieve an early diagnosis, to increase awareness of the coexistence of these conditions, and to achieve therapeutic targets.

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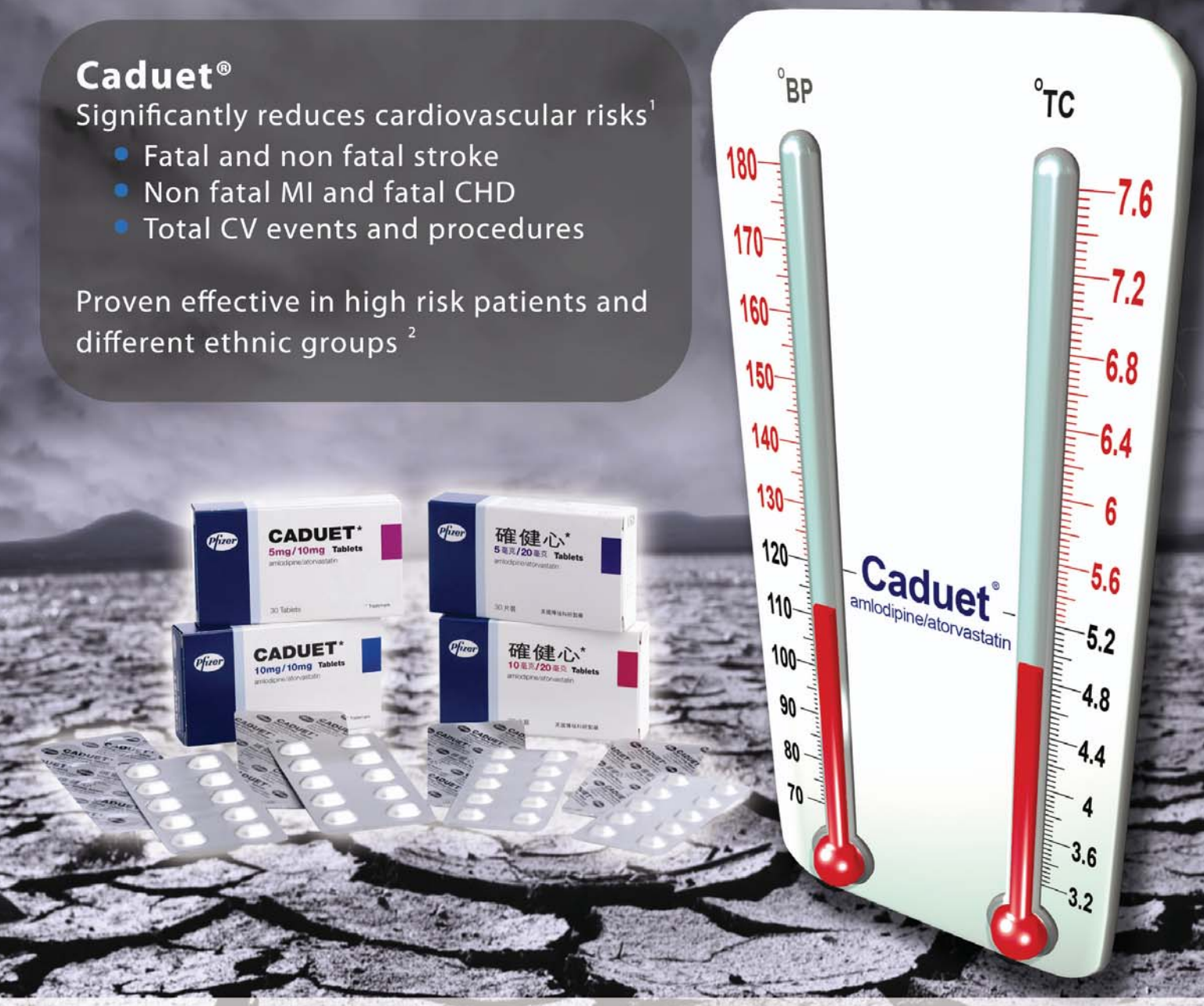

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When to Start Insulin Treatment for Type 2 Diabetes Patients?

Dr. WB CHAN

Clinical Director, Qualigenics Diabetes Centre

Dr. WB CHAN

Type 2 diabetes is a common disease due to relative insulin deficiency and usually runs a deteriorating course due to a gradual deterioration of beta cell function[1-2]. At the time of diagnosis, relative beta cell function is on average only 55% of normal and continues to decline at a rate of 4.5% per year[1]. This is translated into a gradual rise in HbA1c in diabetes patients[2]. The recent ADOPT study showed that by using insulin sensitisers, the rate of rise in HbA1c could be markedly reduced from 2.4% per year with sulphonyurea to 1.2% per year with metformin and 0.7% per year with rosiglitazone.[3] However, zero deterioration in the long run has not yet been achieved up till now. Therefore, one can expect that almost every diabetes patient will need insulin if they survive long enough. This has been well demonstrated in the UKPDS study, in which multiple therapies including insulin were needed as disease progressed.[4-5] The recent IDMPS study, which was a clinic based survey of diabetes patients, showed that 31% of Type 2 diabetes patients were on insulin treatment.[6]

Insulin can be used to control hyperglycaemia almost in any stage of Type 2 diabetes. However, there are some situations in which insulin treatment has been demonstrated to be more favourable than other treatments. These include severe hyperglycaemia at the time of presentation, oral hypoglycaemic agent failure, stress related hyperglcyaemia and in situations in which oral hypoglycaemic agents are no longer safe, such as moderate to severe renal impairment. In this article, we will concentrate on the first two situations which are more relevant to primary care.

Due to delayed presentation, a significant proportion of Type 2 diabetes patients have rather severe hyperglycaemia at the time of presentation. These patients are usually characterised by poor beta cell function and are in fact at a later stage of the disease.[7] A study conducted in China looked at the effects of different modalities of treatment in this group of patients. The subjects in this study were a group of newly diagnosed Type 2 diabetes patients with a mean HbA1c of 9.5%. They were randomised into three groups, namely the insulin pump (CSII), the multiple injection (MDI) and the traditional oral hypoglycaemic agents, namely sulphonyurea and metformin. Their treatment was titrated to reach near normal glycaemia and such treatment was maintained for 2 more weeks after glycaemic target had been reached. Then they were taken off pharmacological treatment and the progression of disease was defined as fasting glucose above 7.0 mmol/l. At one year, around half of the subjects received insulin treatment previously could be maintained on life style modification alone, whereas only 25% of those having had received oral hypoglycaemic agents could be maintained on life style modification alone.[8] This study, though not fully compatible with our usual practice, pointed to the important concept of prolonged protective effects of early insulin treatment. In fact, the above mentioned study showed that subjects receiving insulin treatment had greater improvements in beta cell function when compared with oral hypoglycaemic agents, possibly due to resolution of glucose toxicity. It should be noted that UKPDS, a long term landmark trial in diabetes also compared the treatment effects of insulin with other oral agents and came to the conclusion that early insulin treatment did not confer more benefit but caused more hypoglycaemia.[2] However, there are significant differences between the two studies. Firstly, the study in China included diabetic patients with a mean HbA1c of 9.7%, whereas the mean HbA1c in the UKPDS population was 7.0% only. Secondly, the China study adopted much more aggressive treatment strategy using the insulin pump and multiple injections instead of the once daily intermediate acting insulin in UKPDS. Thirdly, UKPDS had a much longer follow-up of up to 10 years, while this study had follow-up data on up to one year only. Therefore, it remains unclear whether the differences in conclusions drawn from these two studies stemmed from the difference in target populations, or the difference in durations of follow-up. However, other studies with early use of insulin suggested that the benefit of insulin treatment may still be observed at two years.[9-10] It is therefore more likely that the difference is mainly due to the difference in target populations.

The second situation in which insulin is frequently used is oral hypoglycaemic agent failure. However, it should be noted that this is a vaguely defined situation and can be interpreted in many different ways. First of all, the time of failure depends on the target HbA1c. Nowadays, ADA recommends HbA1c of below 7.0% as the target for most diabetic patients, which is a much more stringent target compared with the old days. Secondly, the number of oral agents used is not well defined in oral hypoglycaemic agent failure. In the early 90s, when sulphonyurea and biguande were the only two classes of widely available anti-diabetic drugs, insulin was often used when the combination of both failed to control hyperglycaemia. ADA and EASD recommend that the use of insulin can be considered even as early as metformin failure.[11] However, with the availability of more oral agents, the use of insulin

can often be delayed. There are studies showing that at the time of failure of both sulphonyurea and metformin, the addition of glitazone can provide similar glycaemic control compared with insulin.[12-13] There are also studies showing that DPP-IV inhibitors could be safely combined with metformin and sulphonyurea.[14] Therefore, whether oral hypoglycaemic agent failure should be defined as failure of 2 oral agents or three oral agents is still up to individual interpretation. And it remains to be proved whether earlier use of insulin at the time of 2 agents failure confers more benefits than the use of three oral hypoglycaemic agents. However, it should be noted that there are no large scale studies to support the combination of four oral agents, and the use of which should not be encouraged. It is often a misconception that insulin should only be used at the time of very severe hyperglycaemia and as a result insulin use is often delayed. Recently there was a study which looked at the use of insulin at the time of 2 agents failure but with a rather mild degree of suboptimal control. 211 Type 2 diabetes patients with HbA1c between 7-8% on sulphonyurea and metformin were randomised to receive either lantus insulin or life style modification. As expected, the insulin treated group had HbA1c reduced from 7.6% to 6.8%. What was more encouraging was that there was a very low risk of hypoglycaemia despite that the glucose level before insulin treatment was not very high. Furthermore, in that particular study, the life style modification group had a reduction of 0.16% only despite successful weight reduction of 2.5 kg during the study.[15] Therefore, in case of oral agent failure, one should not wait until very high glucose levels before insulin treatment is started.

Combination therapy of insulin with oral agents is the most often adopted regime in starting insulin treatment. The recent 4T-study looked at the effects of different regimes in the initiation of insulin treatment in patients not under good control with 2 oral agents. Three regimes were compared, including prandial insulin, basal insulin and premix insulin. After 3 years follow up, the regime with best glycaemic control, least hypoglycaemia and best patient satisfaction was to initiate basal insulin and followed by adding prandial insulin if the patient failed to reach treatment target.[16] Studies also showed that long acting insulin analogues including insulin levemir and insulin lantus had less symptomatic and nocturnal hypoglycaemia compared with NPH insulin although both could achieve similar HbA1c level.[17,18] This is important in real life as the patients are less motivated compared with those in clinical trials, and hypoglycaemia will be one of the major barriers in initiating insulin treatment and achieving good glycaemic control. Insulin levemir has the advantage of less weight gain compared with other types of insulin, whereas lantus has the advantage of being more long acting.[19-20] Furthermore, meta-analysis showed that in order to achieve a HbA1c below 7%, one should aim at a fasting glucose below 5.5 mmol/l, which is a more stringent level compared with those on oral hypoglycaemic agents.[21]

Despite being a common treatment in type 2 diabetes, misconception about insulin is very common among not only diabetic patients, but also health care professionals. Insulin use has been labelled as a sign of non-compliance, linked to terminal disease and mis-labelled as addiction. In a survey about insulin use in type 2 diabetes, only a quarter of the patients believed that insulin use could help them to achieve good glycaemic control and around half of them were worried about the need to start insulin. However, that study also showed that Type 2 diabetes patients treated with insulin had similar levels of motivation to comply with treatment compared with those not put on insulin. Therefore, once the patients have accepted insulin treatment, it seems the stress of treatment is less severe than one would have expected[22].

In conclusion, insulin treatment can be used at almost all stages of diabetes. In clinical practice, insulin treatment should be initiated if the patients have severe hyperglycaemia at the time of presentation or if the patients are not under good control even with the use of multiple agents. However, insulin treatment is often mis-labelled and needs extensive explanation before one embarks on treatment.

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Primary Hyperparathyroidism - A Surgeon's Perspective

Dr. Wai-fan CHAN

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Introduction

Primary hyperparathyroidism (pHPT) had been considered to be a rather rare disorder of calcium metabolism, identified only when signs and symptoms were present. With the advent of the multichannel autoanalyser in the early 1970s, hypercalcaemia became much more common, and the prevalence and incidence of pHPT were found to be much higher than previous estimates. The clinical profile had also shifted from a symptomatic disorder towards a more asymptomatic state. The phenotype of asymptomatic pHPT became the overwhelming predominant form of pHPT in countries where biochemical screening became routine. In countries where biochemical screening was and still is not routine, pHPT continues to be an uncommon disease.

Indications for Parathyroid Surgery

Symptomatic Disease

There is no controversy that all patients with symptomatic biochemically confirmed pHPT should undergo surgical treatment. In these symptomatic patients , following successful parathyroidectomy, improvement in bone density and reduction in fractures, reduced frequency of recurrent kidney stones, improvement in some neurocognitive elements, decreased incidence of cardiovascular complications, and decline in premature death have been well demonstrated.

Asymptomatic Disease

The recommendation of surgical treatment for seemingly asymptomatic patients with pHPT, however, remains controversial. To address this issue, consensus conference was organised by the National Institution of Health in 1990, and subsequently in 2002, and 2008, attempted to define a rational basis for recommending parathyroidectomy for asymptomatic patients (Table 1)[1,2]. However, other authorities have recommended more liberal guidelines in managing these patients based on the inability to determine predictably whether complications or progression of this disease will develop in a specific patient[3-5].

Moreover, growing evidences have demonstrated that the disease does not appear to be indefinitely stable. Deterioration of bone density and renal function had been demonstrated in one third of patients on long term follow-up[6-9]. The bone density and renal concentrating capacity will however show improvement consistently after parathyroidectomy [10,11]. Patients with 'asymptomatic' pHPT were also shown to have more neuropsychiatric symptoms and, in some cases, showed improvement after successful parathyroidectomy[12-14]. Increased incidence of hypertension, left ventricular hypertrophy, vascular calcification and stiffness, and myocardial events had been demonstrated in patients with mild pHPT[15-17]. They also appeared to be at risk of premature deaths, due to cardiovascular disease or cancer[18]. All these new data on the natural history of asymptomatic pHPT have favoured surgery. There is growing consensus that prevention of these events, when possible, by earlier parathyroidectomy, rather than treatment of complications might be prudent in patients who can be defined to be at risk, and surgery may eventually be appropriate in the majority of patients with asymptomatic disease.

Another argument advanced to support surgical referral to this disease is the durability and overall cost-effectiveness of surgical treatment over long-term monitoring[19-21]. Moreover, advances in the effectiveness and safety of new surgical techniques have brought added confidence to its recommendation.

Table 1. Comparison of new and old guidelines for parathyroid surgery in asymptomatic primary hyperparathyroidism.

Measurement	1990	2002	2008
Serum calcium (>upper limit of normal)	1-1.6mg/dl (0.25-0.4mmol/L)	1.0mg/dl (0.25mmol/L)	1.0mg/dl (0.25mmol/L)
24hour urine for calcium	>400mg/d (>10mmol/d)	>400mg/d (>10mmol/d)	Not indicated
Creatinine clearance (calculated)	Reduced by 30%	Reduced by 30%	Reduced to <60ml/min
Bone marrow density	Z-score <-2.0 in forearm	T-score <-2.5 at any site	T-score <-2.5 at any site and/or previous fracture fragility
Age (year)	<50	<50	<50

Surgical Treatment of Primary Hyperparathyroidism

Bilateral neck, 4-gland exploration had been the gold standard since the first successful parathyroid surgery in 1925[22]. Through a 6-8 cm lower neck incision, all 4 parathyroid glands are identified after mobilisation of both thyroid lobes and the adjacent structures. It ensures that all glands are visualised and the morphology of the gland determines the need for resection. Intra-operative frozen section is also required to confirm whether the excised gland or tissue is histologically abnormal. The extent of resection (number of glands being removed), and the cure rate, depends on the experience of the operating surgeons and pathologists.

As the vast majority (over 85%) of patients with pHPT have a single adenoma as the cause of their disease, the gold standard, bilateral neck exploration, was theoretically necessary for less than 15% of patients who had multi-gland disease. Thus, the current paradigm has shifted to a limited exploration and excision of the adenoma only by less invasive approaches. The challenge has always been to, preoperatively, or even intraoperatively, categorise individual patients. With the recent technical innovations including improved preoperative localisation, availability of rapid intraoperative parathyroid hormone (PTH) assays, and intraoperative gamma detection probes, various techniques of minimally invasive parathyroidectomy have become applicable with excellent outcomes. However, even if we can identify which patients have a single adenoma and which do not, finding the adenoma can still be challenging as they can be located anywhere from the base of the skull at the jugular foramen down to the level of the heart. It needs to be emphasised that parathyroid surgeries should be performed only by surgeons who are highly experienced in this operation; otherwise failure and complication rates will be unacceptably high[23].

Preoperative imaging in the setting of pHPT is designed to assist the surgeon in identifying the anatomic location of abnormally functioning or enlarged parathyroid gland(s). Positive imaging studies are not useful for the confirmation of a diagnosis of pHPT whilst a negative scan does not exclude the diagnosis of pHPT. Furthermore, all imaging studies demonstrate both false-positive and false-negative findings that could be misleading. The most commonly employed techniques are radionuclide (sestamibi) scan (Fig.1) and ultrasound (Fig.2). The success of these imaging studies is highly dependent on the operator and the experience of the centres performing the procedures. Computer tomography, magnetic resonance imaging, selective venous sampling for PTH are usually reserved for patients who have previous failed explorations or for whom other localisation techniques are uninformative or discordant. Failure to localise the adenoma preoperatively is generally regarded as a contraindication for minimally invasive parathyroidectomy, the other contraindications include the presence of multiglandular disease, multiple endocrine neoplasia, malignancy, and the presence of concomitant thyroid disease.

Minimally invasive parathyroidectomy is generally described as the removal of parathyroid adenoma(s) through a small skin incision and, most importantly, without four-gland visualisation. Thus intraoperative adjuncts such as quick PTH assay have been employed in some centres to determine the extent of surgery, and to confirm operative cure. Due to the relatively short half-life of PTH (4-5minutes), a dramatic drop in circulating hormone can be detected once the abnormal gland has been removed. A curative drop in PTH allows the surgeon to terminate the operation and obviate additional exploration, whereas failure of the PTH levels to demonstrate an adequate decrement mandates further exploration due to the presence of presumed additional hyperfunctioning gland.

Approaches of minimally invasive parathyroidectomy can be grouped into four main categories. The choice of these approaches is highly surgeon, or institution specific, and should be based on the expertise and resource availability of the surgeon and the institution.

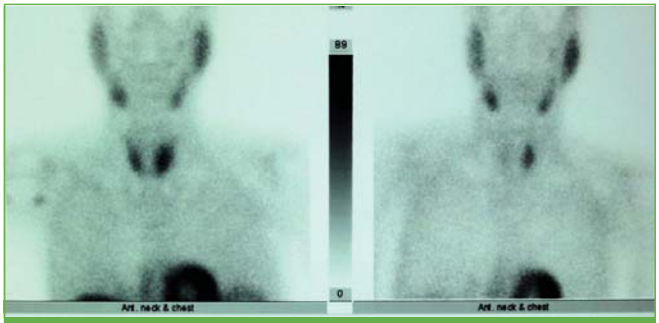

Figure 1. Delayed wash-out in Sestamibi scan at upper pole of left thyroid lobe was suggestive of left superior parathyroid adenoma.

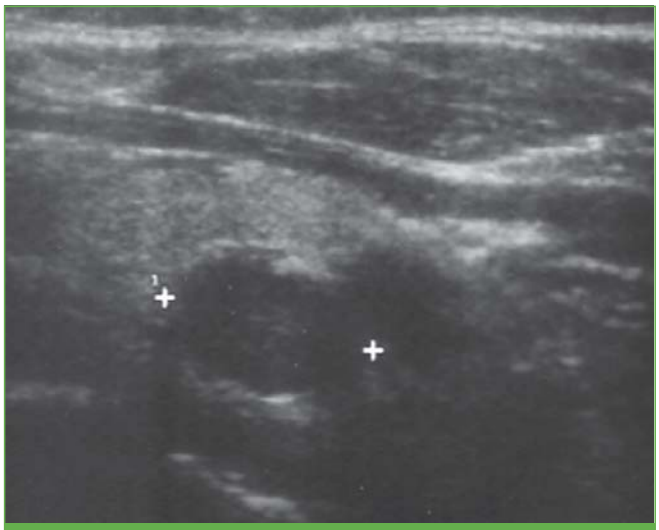

Figure 2. Appearance of parathyroid adenoma on USG (longitudinal section) behind the lower pole of left thyroid lobe.

Focused Parathyroidectomy

This is by far the most widely employed technique. It is performed via a 2-3 cm incision under either local, cervical block or general anaesthesia. This incision can either be made in the midline (Fig.3) of the neck or unilaterally (Fig.4), based on the findings of preoperative imaging or by bed-side ultrasound performed by the operating surgeon. Following the excision of the abnormally enlarged gland(s) (Fig.5), operative cure can be confirmed by rapid intraoperative PTH assay.

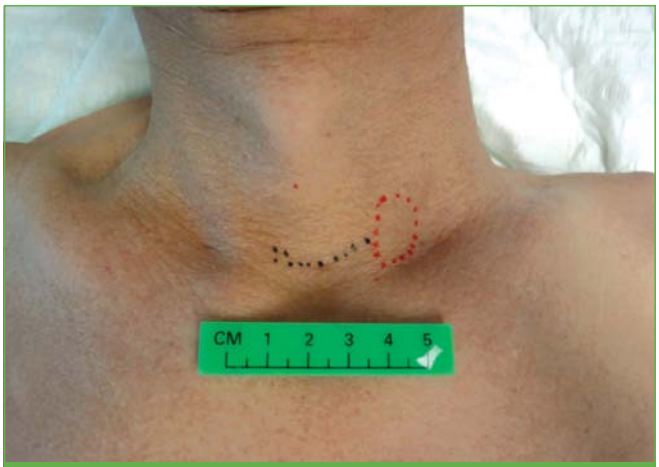

Figure 3. Minimally invasive parathyroidectomy by a 2-cm skin incision (blue line). Left inferior parathyroid adenoma was localised by bed-side USG (red line).

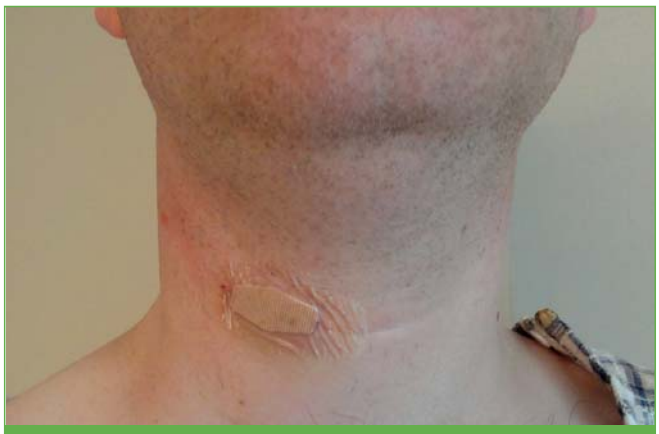

Figure 4. Patient was discharged within 24-hours following focused parathyroidectomy by lateral approach.

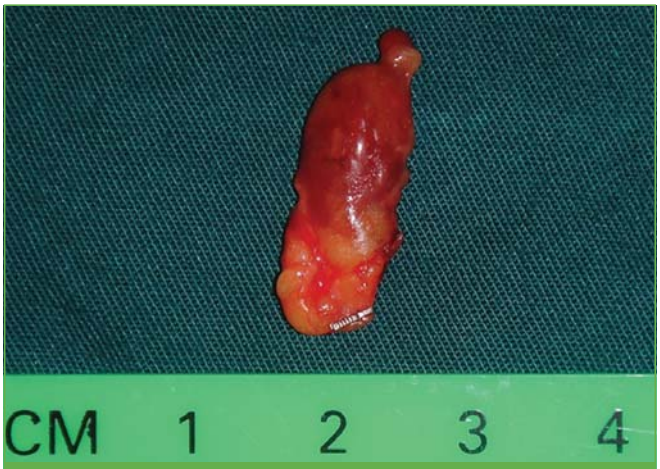

Figure 5. Clinical photo of the specimen showing the excised parathyroid adenoma.

Minimally Invasive Radio-guided Parathyroidectomy (MIRP)

This approach requires a preoperative administration of low dose radioactive sestamibi. Through a 2-3 cm midline incision, a gamma probe is used to measure the radioactivity of the parathyroid glands, and to guide the exploration and excision of the abnormal gland(s).

Minimally Invasive Video-assisted Parathyroidectomy (MIVAP)

This procedure is performed via a 2cm midline or lateral neck incision, and by the use of an endoscopic camera, the operative field is magnified to facilitate the dissection of the parathyroid adenoma.

Endoscopic Parathyroidectomy

It can be performed via the cervical, axillary, or anterior chest wall approaches. Typically, 3 to 4 trochars are inserted under general anaesthesia. Gas insufflation is also required. However, most groups have abandoned this technique because of additional personnel and costs, the longer operating time, need of general anaesthesia and gas insufflation.

Research studies suggested that the various techniques of minimally invasive parathyroidectomy, when performed by experienced surgeons, all offer a similarly high success rate (95-98%) and low complication rate (1%), largely composed of recurrent laryngeal nerve injury, or temporary hypocalcaemia[24,25]. Shorter operating time and hospital stay, decreased pain, improved cosmesis, and most importantly, a lower incidence of postoperative hypocalcaemia have been demonstrated in studies comparing minimally invasive parathyroidectomy to that of the conventional approach[26,27].

Conclusion

Surgery is always considered to be the definitive therapy in primary hyperparathyroidism. There is growing consensus that surgery may eventually be appropriate in the majority of patients, even with asymptomatic disease. Minimally invasive parathyroidectomy, by expert endocrine surgeons, in properly selected patients is safe, cost-effective, and associated with a high cure rate and very low perioperative morbidity.

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Office Exercises for the Sedentary Physicians

Mr. Derek POON

CPT(ACE, NASM, NSCA)
MSc Sports Medicine & Health Science(CUHK)

Mr. Derek POON

We have heard many excuses from our patients for not doing exercises - "I'm too busy...", "I have arthritis, I don't want to risk falling down out there as I might not be able to get up by myself...", okay, what could we do to help them? And as a physician sitting all day seeing these patients, are you giving yourself the same excuses for being sedentary?

Changing your lifestyle from sedentary to active is very important, meaning that you've got to stand up & move after having seated for over 30 mins. Although the general recommendation is to do exercises at least 3 times/week & 30 mins/time, doing 5-15 mins of exercises frequently(like 1-2 times/day) would also help in an amazing way. I hope the following home/office workout samples could help open your mind a little:

Name of ex	Pic(Start)	Pic (End/different view)	Description
Aerobic Ex (a few mins):			
1) On-the-spot stepping			Simply stand up, swing your arms with elbows at around 90 degrees, raise your knees & start marching;
2) Up & down a low stool			If your knees are good, u can step up & down the stool for a few mins;
3) Fake Simulated rope jumping			Have you ever thought of doing rope jumping without using a rope? Try, it's also fun(and feel less frustrated)
4) Seated heel walk			Just move your chair with the heels continuously

Name of ex	Pic(Start)	Pic (End/different view)	Description
Resistance ex (10-12 reps):			
1) Seated scissors			With your knees slightly bent, raise the legs alternately in a slow pace
2) Standing wall push up			With your feet open up wide will be easier
3) Seated calf raise			Raising the heels together, or alternately, it's also a good move on the plane for preventing deep vein thrombosis!

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High Tech and High Touch Communicator

Ms. Janice NG

Hypnotherapist, Master practitioner of Neuro-Linguistic-Programming

Ms. Janice NG

Chronic diseases such as diabetes mellitus, asthma, chronic heart failure, etc. are the major causes of morbidities and mortalities. Clinical research has shown that effective management with treatment to achieve an effective target prevents long term complications. For a disease such as diabetes mellitus, effective management requires adequate patient education, life-style modification, self-monitoring, regular clinic attendance and compliance to therapies. Effective communication between physicians and patients forms the cornerstone for developing a good rapport with the patients resulting in optimal management of these chronic conditions. Neuro-Linguistic-Programming (NLP) is a programme which will helps health care professionals to develop skills for effective communication amongst themselves and with their patients.

Historical Perspective

The co-founders, Richard Bandler and linguist John Grinder, claimed it would be instrumental in "finding ways to help people have better, fuller and richer lives". They coined the title to denote their belief in a connection between neurological processes ('neuro'), language ('linguistic') and behavioural patterns that have been learned through experience ('programming') and that can be organised to achieve specific goals in life.

NLP was originally promoted by its co-founders in the 1970s as an effective and rapid form of psychological therapy capable of addressing the full range of problems which psychologists are likely to encounter, such as phobias, depression, habit disorders, psychosomatic illnesses and learning disorders. It also espoused the potentials for self-determination through overcoming learned limitations and emphasised well-being and healthy functioning. Later, it was promoted as a 'science of excellence', derived from the study or 'modelling' of how successful or outstanding people in different fields were able to obtain their results. It was claimed that these skills could be learned by anyone to improve their effectiveness both personally and professionally. Moreover, NLP had greater influence in management training, life coaching, and the self-help industry. This article aims to introduce you the language pattern with using the Representational Systems in NLP which can be used to make communication more efficiently.

What are NLP Representational Systems?

According to the NLP theory, Representational systems are the way in which we 'represent' our world, both to ourselves and to others. We have four major representational systems - visual, auditory, kinesthetic and auditory digital.

Speaking their Language

Knowing a person's favourite thinking system, you are able to 'speak his language' which enhances rapport and makes what you are saying easier to be understood and more appealing to him.

Let's say you and I are in a conversation. You speak good English but your native language is Cantonese. Although you can understand my English, if I begin speaking excellent Cantonese, it will significantly change the dynamics of the interaction and of the relationship. You will find it warmish to understand the nuances of what I am saying and are also likely to unconsciously feel better disposed towards me.

In the same way if you are more at ease with your kinesthetic sense and I am more at ease with my visual sense, we can still converse easily. However when I switch discussing and describing in a more kinesthetic way, the dynamics of our communication will be improved.

The implications are amazing! What if you could sell to a preferred representational system and increase conversion rates? What if you could interrupt negative behaviours by using his own preferred representational system? What if you could identify a person's preferred representational system and use that to get him to enjoy something?

Recognising Representational Systems

One of the first skills we develop when learning NLP is to recognise how a person is using his senses or 'representational systems'. We do this through listening to clue words and phrases called predicates, watching the directions in which a person's eyes move when they are thinking, their eyes accessing cues.

Visual (seeing)

Visual representational system means you prefer seeing over hearing or touching.

- People who are visual often stand or sit with their heads and/or bodies erect, with their eyes up. They will be breathing from the top of their lungs.

- They often sit forward in their chair and tend to be organised, neat, well-groomed and orderly.
- They memorise by seeing pictures and are less distracted by noise.
- A visual person will be interested in how you look. Appearances are important to them.

Auditory (hearing)

Auditory representational system means discussing, talking or sounding things out.

- People who are auditory will quite often move their eyes sideways.
- They breathe from the middle of their chest.
- They typically talk to themselves and can be easily distracted by noise.
- They learn by listening and usually like music and talking on the phone.
- The auditory people like to be told how they're doing and respond to a certain tone of voice or set of words.
- They will be interested in what you have to say.

Kinesthetic (feeling)

Kinesthetic representational system relates to doing, moving and feeling.

- People who are kinesthetic will typically be breathing from the bottom of their lungs so you'll see their stomach go in and out when they breathe.
- They often move and walk very slowly.
- They respond to physical rewards and touching.
- They also stand closer to people than a visual person.
- They memorise by doing or walking through something.
- They will be interested in something if it 'feels right', or if you can give them something they can grasp.

Auditory Digital

- These people will spend a fair amount of time talking to themselves. Some even move their lips when they talk to themselves.
- The auditory digital people can exhibit characteristics of the other major representational systems

Identify your own preferences when you think of your favourite activities, the thoughts in your head, and basically come to awareness of how you get a sense of the world around you.

To be sharp in assessing a person's preferred representational system, observe his behaviour, including eye movements, physiology and preferences for activity. Listen also to sensory words being used. Visuals tend to use "see, colour, bright" words. Auditories use words like "hear, speak, and harmonise". Kinesthetics "feel, touch, weigh" their thoughts. Once you listen to more people speaking, you can see patterns evolving over time.

Visual	Auditory	Kinesthetic
Sensory words:	**Sensory words:**	**Sensory words:**
- see	- hear	- touch
- visualise	- sound	- feel
- look	- harmony	- connect
- picture	- orchestrate	- weigh
- flash	- ring	- lift
- appear	- sing	- grab
- point	- listen	- move
Characteristics:	**Characteristics:**	**Characteristics**:
Faster rhythms	Medium rhythms	Slow rhythms
Eyes access upward or stare in the distance	Eyes access sideways	Eyes access downward

Track and Repeat Patterns

How can you rapport with someone according to his representational system?

How can you identify a person's preferred representational system and use that to get him to enjoy something?

E.g. **V** (visual) - **V** (visual) - **A** (auditory) - **K** (Kinesthetic) - **AD** (auditory digital)
Using the same rhythm similar sequence with own words.
Visuals need to "see" and pictures.
Auditories need to "hear" and discussing and be patient with their question.
Kinesthetics need to "feel" touch the thing.
Auditory digitals need to "talk" to themselves.

Be Alert and Flexible!

Everyone is capable of accessing different representational systems. Different states often trigger different representations e.g. happy, sad tends to kinesthetic.

Sometimes people may put others into 'boxes' or categories according to race, religion, sex, sexual preferences, accent, dress, type of car, physical appearance, etc. but not in NLP which is live knowledge. People's behaviours change from time to time, so we do need to be alert and flexible.

Remember we use all of our available senses all of the time. It is true that we pay more attention to some representational systems than others. And in certain situations this choice can be narrowed down to mainly one sense. However it is wise to avoid the assumption that because someone uses lots of visual predicates today that he is a 'visual' or that he will be the same next time you meet.

We've come across people who, after an NLP course, put a category on others for which representational system as they 'are'. Actually, they missed a few key points: most people switch favoured representational systems from time to time, from situation to situation and, in particular, depending on stressed or at ease they are.

Rather than using their boxes it would be easier and safer for you to simply listen to the person in the first few moments of the conversation and adapt to his *current* favoured system. Be well-prepared to re-check each time you communicate with someone to verify what he is 'doing' today, here and now, rather than expect him to fit into a box.

The key is to be alert and flexible. Alert to whichever system a person is favouring right now. And flexible enough to be able to match that system and 'speak his language'. Speaking his language is both a gift to him and a valuable influencing tool for you. Accomplished communicators can interact with ease whatever the other person's favoured system.

Here is a rough guide for the technique which hopefully will help physicians or other health care professionals in achieving effective communication enhancing long term care for patients with chronic diseases.

Discover the Right Cures for Hangovers - A Dietitian's Point of View
A Binge Drinker - How to Define?

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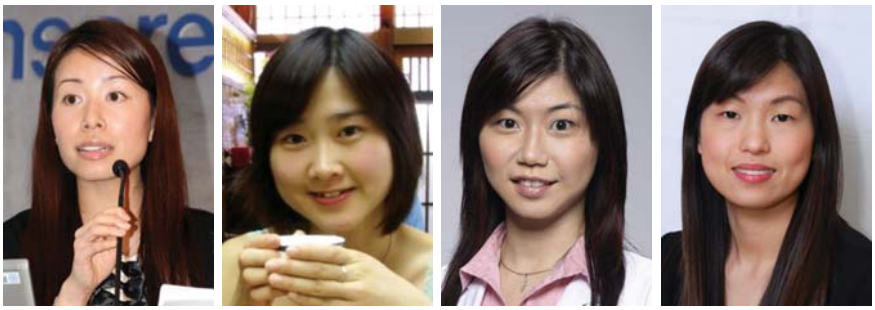

Ms. Ingrid YM KAN Ms. Kathy KW YIM Ms. Vivian WY LAU Ms. Sylvia SW LAM

"Binge drinkers are those people who fall about in the street, vomiting while waiting for taxis. I'm definitely not a binge drinker!" says David, one of my patients.

David is 35 and works in finance and freely admits that he enjoys a drink.

"I like drinking socially, it helps me relax and have a laugh with my mates. It's not as though I touch drugs, so I figure that having a drink or two is a safe way for me to unwind"

We all have heard of the binge drinking phenomenon; those people who vomit, cause damage and fight. That's got nothing to do with the rest of us, who merely enjoy a drink?

Same here, David does not identify himself as a binge drinker, but as you can see from his drink diary, he easily consumes 5 standard drinks in a single drinking session.

Drink Diary:

Day	Drinks	Standard drink
Monday	Stayed home, just had a half bottle (~350) of wine -recovering from the weekend!	3.6
Tuesday	Went to the gym- didn't touch a drop!	0
Wednesday	Went to the gym- didn't touch a drop!	0
Thursday	Went out for dinner with business partner - 2 glass of beer, 1 glass of champagne, 2 glasses of red wine and finish with a nip of port	5.5
Friday	Happy hour with workmate - About half dozen of beers	6.6
Saturday	Half a bottle of wine during meal with wife	3.6
	Stay with tea and water!	0
	Weekly total	**~19**

One standard drink contains about 10g of pure alcohol. Therefore, 1 pub measure (~30ml) of spirits (Whisky, gin, vodka),1 glass (~60ml) of fortified wine (Sherry, martini, port),1 average sized glass (100ml) of table wine,2/3 can (~285ml) of beer are all equal to one standard drink.

According to the Department of Health, one who drinks ***5 standard drinks or more alcoholic drinks in a single drinking session*** is considered as a binge drinker. So David is definitely one of them.

Men are more likely than women to drink alcohol excessively. The Population Health Survey conducted by the Department of Health in 2003-2004 estimated that about 1 800 000 people in Hong Kong drank alcohol, and 14.4% of them reported they had had 5 or more alcoholic drinks in a row (binge drinking!!) in the preceding month.

In order to consume alcohol in the right way, ***the Department of Health recommends that men and women should not consume more than two and one standard drinks a day respectively*** and have at least 2 alcohol-free days per week.

David was shocked to discover that he is drinking almost two times the daily recommended alcohol intake. So like David, if you realise that your drinking habit qualifies you as a binge drinker; then what will it do to your health?

Alcohol in moderation has been proven to help reduce the risks of coronary heart disease. However, research has shown that binge drinking can lead to an increased risk of health problems, including hypertension, mouth, breast and liver cancers.

So for health professionals who enjoy drinking, drink smart and sensibly. Not only that you will have a good time, but you will also enjoy better health. Remember, moderation is the best!

Drinking Alcohol - Differences by Gender

Alcohol is metabolised in the same way in both men and women. The rate of alcohol metabolism is about 5g per hour (i.e. half of a standard drink), however, it is usually slower in women. It is because they have smaller liver, lower percentage of total body water and less first-pass gastric alcohol dehydrogenase. This means the same amount of alcohol would lead to a higher blood alcohol concentration in women. Therefore, women tend to be less tolerant of alcohol than men[5].

In addition to gender and body size, people would have varied responses to alcohol due to differences in age, body metabolism, nutrition, genetics and experience of drinking. However, no matter men or women, it is of vital importance to remember that "When You Drink, Don't Drive". Even though one may think that he/she is not going to get drunk easily, drinking 2 standard drinks may result in a rise in a breath alcohol concentration near the legal limit of 22μg/100ml[3].

Although the suggested drinking limits of healthy men and women are up to 2 drinks per day, the "alcohol tolerance level" of pregnant women is more stringent. It is because heavy drinking during pregnancy would lead to the foetal alcohol syndrome. Babies suffering from this syndrome would have unusual facial appearances, prenatal and postnatal growth impairment, central nervous system dysfunction and possibly physical abnormalities. Even moderate drinking pregnant women would have babies small for dates[5].

For healthy men and women who choose to drink, drinking up to 2 standard drinks in a single occasion is

recommended1. For those with hypertension, men are recommended to drink no more than 2 standard drinks, while for women no more than 1 standard drink per day[2]. A standard drink contains 10 grams of alcohol, which is equivalent to 250ml of ordinary beer, 100ml table wine or 30ml of whisky[4].

Myths in Dealing with Hangovers

There are many folk remedies for hangover commonly used in Hong Kong. Some of them are quite innovative but the rationale of using any remedy is to re-hydrate the body, replenish the energy and/or nutrient lost and reduce symptoms of hangover such as headache, dizziness, nausea, vomiting, indigestion etc. A lot of hangover remedies have been tried, but in fact there's not much evidence that they work. Let us explore each of the myths on dealing with hangovers.

1. **Freshly squeezed lemon juice with lukewarm water:** squeeze half a lemon and drink the lemon juice with lukewarm water. This fills the water with Vitamin C. Vitamin C is an antioxidant which kicks out free radicals in the body left over from the alcohol a night before and it stimulates the liver to break down the alcohol. Chinese people tend to believe the sourness from lemons can revoke a hangover and reduce nausea. However, the objective of drinking lemon juice water is to retain fluid that guards against dehydration thereby staving off hangover headaches which usually result from dehydration of the brain.

2. **Instant noodle soup:** Take the seasoning packet from the instant noodle (preferably 出前一丁) and dissolve it in boiling water. This instant noodle soup is good for replacing salt (sodium) and potassium depleted by drinking alcohol.

3. **"Hair of the dog" from Australia:** by drinking a little alcohol in the morning may provide the mild numbing effect to counteract the hangover symptoms at first. It actually prolongs the misery because the liver is still working hard to break down the toxins from metabolising the alcohol drank from the previous evening. More alcohol means the liver has to work even harder.

4. **Can of cola with analgesics:** A can of coke contains sugar and caffeine which helps to boost the energy level when having a hangover. However, replace the coke with water or electrolyte-water is even a better choice because one should rest more instead of staying awake. Taking analgesics for headaches is definitely not a good idea. Aspirin upsets the stomach and aggravates the symptoms of a hangover. Acetaminophen when mixed with the alcohol in the blood, might cause acute liver failure, which can be fatal. Ibuprofen irritates the stomach lining and may lead to stomach bleeding.

In a nutshell, dehydration is responsible for most of the worst effects of a hangover and using the above myths may help to lessen the effects a bit. Water is the best cure for re-hydration but not too much water. It can lead to hyponatraemia and can be fatal. Drinking 12 eight-ounce glasses a day should be adequate for re-hydration. Water also helps to prevent a hangover if you drink a glass of water in between your alcoholic drinks. The most effective way to avoid the symptoms of alcohol induced hangovers is to avoid drinking.

To Cure Hangovers is to Prevent Hangovers

Based on the systematic review about alcohol hangover by M. Pittlers in December 2005, when searching the term "hangover cure" on Google, 325,000 hits were found[6]. So which cures are actually true? Interventions ranged from having medications like aspirin or acetaminophen to eating foods such as bananas, eggs and bacon, fruit juices or even having another alcoholic drink in the following morning ("Chasers" or "Hair of the dog") were found[7,8]. In Chinese culture, many will use American ginseng tea, hot water with honey, or even over-the-counter pills or vitamins claimed to help detoxify alcohol faster during the hangover. However, most of the above anecdotes have not been scientifically proven.

The first line **treatment to hangovers is to prevent hangovers**[9]. I am not telling you to stop drinking, but there are a few tips that you can try:

- **Don't drink on an empty stomach.** Foods can delay alcohol absorption. Try eating some foods which contain fat and carbohydrate such as a cheese sandwich, or Margherita pizza (lowest calorie among all pizzas!) or a handful of nuts.

- **Drink slowly.** Try to have a glass of non-alcoholic drinks such as water, lime soda or diet soft drinks in between the alcoholic drinks.

- **Count your drinks.** It's recommended that women should have no more than 1 standard drink while men should have no more than 2 standard drinks per day. 1 standard drink is equal to 360 ml beer or 150 ml of wine or 30 ml of whisky or brandy. When you cannot count, it means that you have been drinking too much already.

- **Choose alcohol with lesser congeners.** Studies showed that alcoholic beverages containing fewer congeners such as vodka and gin are associated with lower incidence of hangovers than those containing more such as red wine, brandy and whisky.

So, what happens if you really have drunk too much? I will suggest the **RAG** approach:

- **Re-hydrate yourself** with lots of fluids, especially before you go to bed. Sports drinks such as Pocari Sweat or Gatorade contain glucose and electrolytes which help the body to re-hydrate faster than just water. Some studies showed that fructose from fruit juices can help, but it has not been proven yet.

- **Avoid drinking coffee or "Chasers"** Coffee may relieve the symptoms of fatigue or help alleviate headaches, but the relief is only temporary. Also, coffee works as a diuretic which further dehydrates your body which might worsen the symptoms afterwards. The popular belief of having another drink or drinks for hangover cure is absolutely not true. Additional drinks will just add burden to your

liver, making the hangover worse or even leading you to drink more.

- **Get plenty of rest.** Time is the most important cure for hangovers as alcohol will usually be metabolised totally in 8 to 24 hours. So it's best to plan a day-off after your party night.

Nevertheless, one is not encouraged to take any over-the-counter remedies such as those "magic cure for hangover" or vitamin pills such as high dose of vitamin B complex and C which are very common in the market. The effects of these remedies have not been proven yet and excessive intake of nutritional supplements might lead to other health side effects.

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...and Finally I Decided to Switch from Pen to Pump

Ms. Sandra WIERENGA

Ms. Sandra WIERENGA

The insulin pump is to some people a strange digital product that is only invented for "wise guys". To be honest, it took me also a while before I decided to switch.

I, 44, Dutchie, was diagnosed with diabetes 1 at the age of 18. I had to inject myself with the needle and years later I got the insulin pen. I started to use the insulin pump, after using the insulin pen for about 15 years.

When I was introduced to the insulin pomp for the first time, it took me 5 minutes to decide that I would never feel comfortable to live with such a strange digital product hanging on my body. I was used to the insulin pens, so why should I changed that? no way!

Two years later, I was having dinner with my friend, who had also diabetes. I took my pens, and struggled with these for giving myself insulin, and as usual everyday, I had to inject myself with 2 needles,...hurray!. Well, I was waiting for my friend to do the same, but the only thing she did was pressing a button, on a strange digital product (pump) that was hiding somewhere underneath her clothes... Now believe me that seeing this really triggered me and I asked her all about it...How, What, Where...etc. She was talking so satisfied about this pump and she told me that it made her life so much easier! The fact was, that she did not only tell me about it, but I saw it all happening with my own eyes... That story and experience made me decide to go for it!!

A few days later I went to my internist and requested the insulin pump. Within a short time I was the proud owner of a pump. Of course I was a bit excited as doing it yourself is something different than seeing someone else doing it. I was guided really well by a "pump specialist" who came to my home to give me all the explanation I needed, and the manual.

Since the moment that I have a pump it is so much "easier" for me to check my sugar level as it is so easy to adjust my level if needed. In case of a hypo I eat something (candy time!), and in case of a hyper I just have to click on a little bottom of the pump for getting a drop of insulin and that is it. No more struggle with pens, needles several times a day...hurraaayyy!!

But, besides the "hurrays", there were also moments of less pleasant words, f.i. when I had to "hang" the pump somewhere underneath the clothes, especially in the beginning I had to be very "creative" to find solutions. I took me a few weeks for getting creative with it. Sometimes I do modelling work as well as acting work (movies)and in these situations I disconnect my pump and put it in my bag in case I am on the set. It depends on the clothes I have to wear at that moment.

Having a pump also means needing more time to pack a suitcase, as I have to check my toilet bag, where I put my insulin in. Do I have batteries, infusion sets, insulin etc...and sometimes that can be annoying.

At the airports, going through the customs, I always disconnect my pump and put it in my bag (and connect is later on as soon as I am out of their sight), as I mentioned that this little digital machine can draw too much attention. Most of the time the customs officers have no idea what it is and that can cause much confusion and wrong interpretation which takes too much time in case you are in a hurry for boarding in time.

Using the pump is very easy for me in combination with activities in my daily life. In Shanghai I am busy with organising and guiding bike tours (**Bike Around Shanghai**).I show people Shanghai by bike and that is really fun to do, especially when people visit Shanghai for the first time. Of course before riding the bike I show people the map (the route), and tell about the background of the stops etc. Also here my pump is doing a great job. During stops I can check my sugar level and adjust easily if needed. For more info see **www.bikearoundshanghai.com**

Besides doing bike tours, I love to do scuba dive and skiing. When I dive I disconnect my pump and can stay under water for 45 minutes without using insulin (diving takes a lot of energy and therefore I need less insulin). When I go skiing, I can program my pump on releasing 70% of the insulin, which provides me from getting a hypo while skiing down the slope. When I used the pens, I really had to eat so much carbohydrates that I had the feeling that my stomach could explode any minute. I am so happy that this is past time.

Since I have the pump I have much more freedom and regard Diabetes as a handicap (not as a disease) which I can control more easily. The quality of my life has really improved as my HbA1c used to be around 7 when I used the pens. Since I use the pump it is around 6.3...
I have diabetes 1 for 26 years and I am happy to mention that until now I have no diabetes complications like kidney disease, retinopathy, and still all my wounds heal normally and well.

High Altitude Medicine

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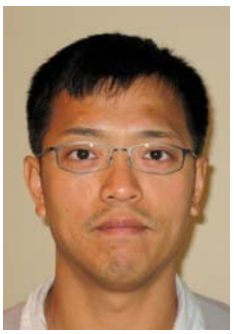

Dr. Man-kam HO Dr. Axel Yuet-chung SIU

Acute Mountain Sickness (AMS)

Acute mountain sickness was first described in details in 1913 by Thomas Ravenhill. He was a medical doctor and was employed by a mine company in Chile. He noticed a variety of symptoms for the miners who travelled to the mine situated 4000 metres above sea level by rail.[1]

The exact pathophysiology for AMS was unknown and seemed to be multi-factorial.[2,3] However, it was generally believed that hypoxaemia at high altitude played an important role in the pathophysiology.[4,5] The partial pressure of oxygen declines on ascend. At the summit of Mount Qomolangma (珠穆朗瑪峰, 8848m), the partial pressure of oxygen was only about one third of that of sea level.[6] The hypobaric hypoxia will stimulate the carotid body to produce a hyperventilation response so as to correct the hypoxaemia but will also result in decrease in carbon dioxide saturation in the blood and respiratory alkalosis.[7] The cerebral blood flow and blood volume will rise. The permeability of the blood brain barrier also increases which in turn causes brain swelling to produce the signs and symptoms of AMS and High Altitude Cerebral Oedema (HACE).[3]

The incidence of AMS varies and depends on the speed of the ascent and the altitude achieved. Honingman et al reported about 22% of AMS at altitude of 2500m to 2900m in USA.8 But Hackett and Rennie found an incidence of 43% among trekkers at above 4000m in Nepal.[9] In general, AMS usually occurred in a non-acclimatised person in the first 48 hours after an ascent to more than 2500m high especially after a rapid ascent in one day or less.[3]

The signs and symptoms of AMS typical occur 6-12 hours after arrival at the new high altitude, but it may also occur the day after the first night sleep.[3,10-11] AMS is a dynamic disease and the severity is in a spectrum from mild cases of headache and decreased appetite to the most severe form which may result in death. The symptoms tend to worsen at night.

The diagnosis of AMS is basically clinical and is based on the symptoms and signs of the patient.[12] Among all, headache is the cardinal symptom for AMS. In 1991, Hypoxia and Mountain Medicine Symposium at Lake Louise, Canada, experts reached a consensus statement for the diagnosis of AMS.[13] The first criterion is high altitude symptoms and signs occurring in the setting of a recent gain in altitude of >2500m. The second criterion is the presence of headache. The third criterion is the presence of at least one of following symptoms: Gastrointestinal tract symptoms, e.g. nausea, anorexia or vomiting; Fatigue or weakness; Dizziness or light-headedness; Sleep difficulty. Patients fulfilling all the three criteria can be considered to have AMS. (Table 1)

Table 1: Diagnosis of AMS

1. In setting of recent gain in altitude > 2500m
2. Present of headache
3. Plus at least one of following symptoms
☐ GI symptoms (Anorexia, nausea, vomiting)
☐ Fatigue or weakness
☐ Dizziness or light headedness
☐ Sleep difficulty

Table 2: AMS and Lake Louise Score

Self Report Score	Severity	Score
1. Headache	No headache	0
	Mild headache	1
	Moderate headache	2
	Severe, incapacitating headache	3
2. GI	No upset	0
	Poor appetite or nausea	1
	Moderate nausea or vomiting	2
	Severe nausea & vomiting	3
3. Fatigue / weakness	Not tired or weak	0
	Mild fatigue / weakness	1
	Moderate fatigue / weakness	2
	Severe, incapacitating fatigue	3
4. Dizziness / lightheaded	Not dizzy	0
	Mild dizziness	1
	Moderate dizziness	2
	Severe, incapacitating dizziness	3
5. Difficulty sleeping	Slept well as usual	0
	Did not sleep well as usual	1
	Woke many times, poor night's sleep	2
	Could not sleep at all	3
Symptom score	**Severity**	**Score**
6. Change in mental status	No change	0
	Lethargy / lassitude	1
	Disoriented / confused	2
	Stupor / semi-consciousness	3
7. Ataxia (heel to toe walking)	No ataxia	0
	Maneuvers to maintain balance	1
	Steps off line	2
	Falls down	3
	Can't stand	4
8. Peripheral oedema	No	0
	One location	1
	Two or more location	2

- **Presence of Criteria 1 to 3 plus total score of at least**
- **AMS score >= 3 (Self report score, Q 1-5)**
- **AMS score >= 5 (Self report score + Symptoms score, Q 1-8)**

The AMS and Lake Louise Score is a scoring system that helps to make the clinical diagnosis of AMS. (Table 2) It includes 8 questions. Questions 1-5 are self-reported scores and questions 6-8 are clinical assessment scores. Patients who fulfil the three clinical criteria of AMS can be diagnosed to have AMS if the total self-reported score (Question 1-5) is at least 3 or the overall score (Self-reported score plus the clinical assessment score) is at least 5. The self-reported score can also reflect the severity of the disease. Patients with self-reported score 3

to 5 can be regarded as suffer from mild AMS and those with equal or more than 6 marks are suffering from severe AMS. In addition, serial assessments with the AMS and Lake Louise score can monitor the responsiveness to the treatment. Decreasing scores mean that the condition is improving while on the contrary, progressive increases in scores mean that the patient is deteriorating and urgent descent is necessary.[13]

Currently there is no single reliable predictor for AMS. Nevertheless the chance of getting AMS is related to the rate of ascent, altitude attained, especially the sleeping altitude, duration of exposure to altitude, amount of exercise taken at this altitude and the underling physiological susceptibility. Age, gender, physical fitness and previous altitude experience are not shown to be able to predict AMS.[14]

Descent remains the gold standard of treatment for AMS. Symptoms usually respond once the patient is transported to a lower altitude. Nevertheless if descent is impossible because of poor climate or inaccessible site, medication can be used to slow down the progress of AMS.

Acetazolamide (Diamox), which is a carbonic anhydrase inhibitor, remains the main medical treatment for AMS.[2] It enhances the excretion of bicarbonates from kidney, which can re-acidify the blood. It also acts as a respiratory stimulant especially at night.[15,16] The net effect of acetazolamide is to accelerate the acclimatisation process. It can speed up the process from normally 24-48 hours to about 12-24 hours. Acetazolamide, however, has no immediate cure for AMS. The common side effects are numbness, tingling, and paresthesia in hands, feet, and lip and taste alternation.[17] The usual treatment dose is 250-500mg BD, children 2.5mg/kg BD. People who cannot tolerate numbness and paresthesia can use a lower dose of 250mg but the minimum effective dose is uncertain. The only contraindication to acetazolamide is hypersensitivity to sulfonamide.

Dexamethasone is an emergency drug for the treatment of AMS. It does not help acclimatisation and is only considered as a temporary measure to delay the deterioration especially at night when descent is not possible. Severe rebounds can occur if the medication is abruptly discontinued. The usual dosage is 4mg Q6H orally or IMI, children 1mg/kg up to 4mg maximum Q6H.[18]

Oxygen can relieve the symptoms of AMS. It can be administered by a nasal cannula to achieve a moderate oxygen flow (2-4 l/min). However it may not be easily available in the rural setting. Rebounds of symptoms can also occur if the treatment is ceased.

An air-tight portable hyperbaric bag, e.g. Gamow bag (Fig.1) is a device to provide hyperbaric therapy to mimic the physiological descent when the descent is not immediately possible.[5,11] The extent of descent achieved by the bag depends on the altitude where the bag is using. For example, the pressure inside the bag at 4250m when fully inflated is equivalent to descend to around 2100m. However, it is manually operated and it may be demanding for anyone to keep the bag pressurised at the high altitude. The effects of the hyperbaric bag will also disappear after the patient leaves the bag.

Fig. 1: Gamow Bag

Pharmacological prophylaxis of AMS is advisable if rapid ascent (1 day) to altitude greater than 3000m or rapid gain in sleeping elevation, e.g. sleep at a site after getting 1000m elevated in 1 day, is unavoidable. Patients who have had history of recurrent AMS are also advised to take the prophylactic drug. Acetazolamide 125-250mg BD is recommended to be taken 24 hour before ascent and can be discontinued after the second or third night at the maximum altitude. If there is allergy to acetazolamide, dexamethasone 4mg BD can be used as an alternative. It should also be started a few days before the ascent.

Ginkgo biloba may also prevent acute mountain sickness.[12] It is postulated that its anti-oxidant action may play a role.[19] Gingko 120mg twice daily taken for 5 days before exposure reduces the incidence and severity of AMS during ascent from 1400m to 4300m over 2 hours.[3] The Chinese medication, Rhodiola rosea (紅景天) is widely used in the Mainland. However there is no systemic review on its clinical use.

Despite pharmacological prophylaxis, the most crucial point for AMS prevention is still gradual ascent.[3] Hydration should be maintained and over-exertion is not advised. Medications, such as alcohol, sleeping pills and narcotics should be avoided. Always climb high and sleep low. If you have any symptom of AMS, do not continue to ascend. If the symptoms of AMS get worse, descend immediately. Table 3 shows the current recommendation for gradual ascent.

Table 3: Recommendation for gradual ascent

1. Don't fly / drive to high altitude immediately, start below 3000m and work up
2. If possible, spend at least one night at intermediate elevation below 3000m
3. At > 3000m, sleep elevation should not be increased more than 300-500m per night
4. For every 1000m gained, spend a second night at the same elevation

High Altitude Cerebral Oedema (HACE)

It is regarded as the end stage and the most severe form of AMS. The hallmark is the presence of a change in mental status and / or ataxia in a person with / without AMS.[12]

The incidence is about 1% for persons travelling to higher than 4000m and about 3% of those with AMS. Without prompt treatment, patients will further deteriorate and death from brain herniation is likely.

The signs and symptoms typically appear slowly and progressively and often occur at night. It may progress within 12 hours from minimal symptoms to coma. Ataxia, e.g. tandem gait, staggering walk and loss of coordination, is the commonest early feature.[7] It can

persist for days to weeks after descent and is usually the last sign to disappear in the recovery phase. If prompt treatment is not initiated, it may progress to change in consciousness, inability to think, confusion, change in behaviour, lethargy, papilloedema and retinal haemorrhage, occasionally cranial nerve palsy and rarely seizure.[12]

HACE is also a clinical diagnosis. The Lake Louise Consensus criteria in making the diagnosis of HACE include a recent gain in altitude, with either the presence of a change in mental status and / or ataxia in a person with AMS or the presence of both mental status change and ataxia in a person without AMS.[13]

The only effective treatment for HACE is a rapid descent. If descent is not possible, dexamethasone 8mg IMI should be administered immediately and then 4mg IMI /PO Q6H.[20] Oxygen 4 L/min flow of 4-6 hours and hyperbaric treatment can be used if immediate descent is not possible.

High Altitude Pulmonary Oedema (HAPE)

The lowest altitude reported for HAPE is at 2500m. It is estimated to occur in 0.0001% of people at 2700m and in about 2 % of people at 4000m.[2,21] It is the most common cause of death related to high altitude. It can be rapidly fatal within a few hours. The risk of HAPE increases with the speed of ascent, exercise during or immediately after ascent, male gender, young physically fit adults and individual susceptibility.[11,14]

HAPE is a non-cardiogenic hydrostatic pulmonary oedema and the exact pathophysiology remains unknown.[3] It is postulated to be the result of a combination of factors plus genetic predisposition. Alveolar hypoxia, patchy pulmonary hypertension, capillaries stress failure in over-perfused area, capillary leakage, infection, inflammation and decreased alveolar clearance of sodium and water are the common pathological findings.[22,23]

HAPE usually occurs within the first four days after arrival at an altitude higher than 2500m and especially on the second night after ascent.[2,14] It is not necessarily preceded by AMS. 50% of HAPE patients have AMS and 14% have HACE. The symptoms vary in severity and are usually subtle in the early course of the disease. Severe fatigue or exercise intolerance is almost universally present, which can be considered as a reliable hallmark of HAPE. Dyspnoea at rest, dry to productive cough, fever and signs of pulmonary oedema are the common symptoms.[21] However, orthopnoea and frank haemoptysis is uncommon.[12] The Lake Louis Consensus definition of HAPE is the presence of recent gain in altitude and the presence of the at least two of the symptoms: dyspnoea at rest, weakness or decreased exercise performance, cough, chest tightness or congestion and the presence of at least two of the signs: tachypnoea, tachycardia, crackles or wheezing in at least one lung field, central cyanosis.[13]

Early diagnosis is critical in the management of HAPE and urgent descent is the gold standard treatment. Oxygen and hyperbaric treatment is life saving if available. Other supportive treatment includes strict bed rest, keep warm, oral nifedipine, diuretic and agonists.[5]

To avoid the threats from HAPE, hikers should be advised not to ascend if there is any symptoms of high altitude illness and to descend if the symptoms do not improve after rest. Nifedipine can be recommended as prophylaxis for those who have history of HAPE when slow ascent is not possible.[21]

Other Possible Health Problems at High Altitude

Ambient temperature usually gets lower on ascent. People at high altitude may also encounter the problems of hypothermia and cold injuries, e.g. frostbite and chilblains. The intensity of ultraviolet ray is about 505 higher at 2000m above sea level.[11] Snow can also reflect the ultraviolet ray. Without appropriate protection, people may suffer from snow blindness (Ultraviolet keratitis) and sunburn. Because of the exposure to cold air at high altitude, people may easily cough and sometimes it may be persistent. It is sometimes regarded as high altitude bronchitis. In contrast to HAPE, high altitude bronchitis does not cause a drop in the oxygen saturation. Without adequate equipment, one may have difficulty to differentiate the two conditions clinically. Therefore, it is important to rule out the possibility of HAPE if a person presents with persistent cough at high altitude.

People who have history of radial keratotomy for correction of myopia may also be at risk for their vision. Their vision may be impaired at high altitude. It was postulated that the hypobaric hypoxia will cause corneal oedema and will preferentially expand at the previous incision site for radial keratotomy. It can result in a hyperoptic shift in refraction and can be incapacitating.[24]

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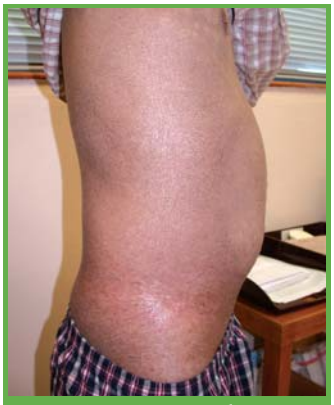
Dermatological Quiz

Dr. Lai-yin CHONG
MBBS(HK), FRCP(Lond, Edin, Glasg), FHKCP, FHKAM(Med)
Private Dermatologist

Dr. Lai-yin CHONG



Extensive pigmented, xerotic and tight skin at the trunk

This is a 30-year-old man who has developed these slightly pruritic skin lesions over the trunk and limbs for three months. Three months ago, he had been admitted into Queen Mary hospital because of acute leukaemia and had received treatments. His past health is good otherwise.

Questions:

1. What is your preliminary diagnosis?
2. What are the other possible cutaneous manifestations of this condition?
3. How do you treat this condition?

(See P.41 for answers)

THE FEDERATION OF MEDICAL SOCIETIES OF HONG KONG
香 港 醫 學 組 織 聯 會

Driving Talk & Test Drive Day

- ☑ Safety Driving
- ☑ Driving Offences Prevention
- ☑ Car Maintenance DIY
- ☑ Car Insurance

Date : 25 July 2010 (Sunday)
Time : 11:00am – 5:00pm
Venue : Hong Kong Disneyland Resort

Buffet Lunch will be served from
12.30pm – 2.00pm

Bring your whole family and have a fun day!
Prior registration is necessary and on a first-come-first-served basis.

Registration Fees : $50 per person

Registration form can be downloaded from www.fmshk.org.
For enquiries, please contact the Federation Secretariat on 2527 8898 or info@fmshk.org.

Sponsored by LEXUS HYBRID

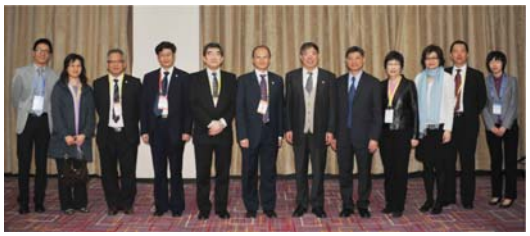
24th National Congress of the Chinese Medical Association, PRC

The Federation was invited by the Chinese Medical Association(CMA) to attend their 24th National Congress on 23-25 April held at the Great Hall of the People, Beijing.

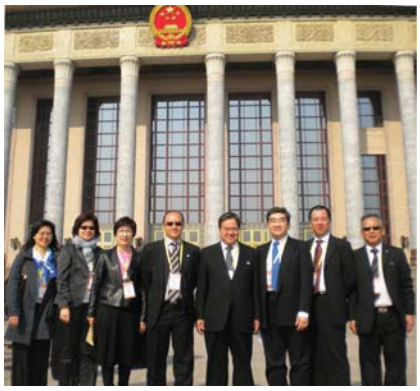
The President of the Federation led a delegate, a total of 8 EXCO members to join the occasion, along with other local and international medical associations. The banquet provided a good opportunity for the international professionals to meet and share their experience with one another.


Dr. CHEN Zhu, Minister for the Ministry of Health of the People's Republic of China, was elected as the new 24th President of the CMA. The Federation was privileged to meet CMA officials at a bilateral meeting after the election. The meeting was most fruitful with useful exchanges of valuable ideas and suggestions for ongoing collaboration.

The Federation would like to send her best wishes to the new team of CMA officials and wishes them an excellent and successful term.



Group photo taken with the newly elected CMA officials at the bilateral meeting.



The Federation committee members presented a souvenir to Professor Zhong Nan-shan, the 23rd President of CMA

Welcome to Our New Member

The Hong Kong Association of Cosmetic Surgery

The Hong Kong Association of Cosmetic Surgery (HKACS), 香港整容外科及醫學美容醫學會有限公司, is founded in 2010 by Specialists in Plastic Surgery who share the common mission of safeguarding the standard and quality practice of Cosmetic Surgery and Medicine in Hong Kong.

The HKACS has the following objectives:

1. To promote the advancement and safe practice of Cosmetic Surgery and Medicine in Hong Kong
2. To maintain a high ethical professional standard in the practice of Cosmetic Surgery and Medicine
3. To disseminate professional information to the public and to promote awareness of the practice of Cosmetic Surgery and Medicine
4. To assist members in the practice of Cosmetic Surgery and Medicine through continuous professional education, research and development of new procedures
5. To foster inter-society and international links
6. To promote fellowship, humanitarian service and charity work

The advancement of Cosmetic Surgery and Medicine is a dynamic process that requires evolution and development of new concepts in the delivery of medical care as well as partnership with other professionals, the industry and the public in order to foster a highest professional standard through the exchange of information, education and research.

Dr. Walter KING
President
The Hong Kong Association of Cosmetic Surgery

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
		* FMSHK Officers' Meeting * HKMA New Territories West Districts - Wuhan Project "Practical Health Informatics Course for Doctors" (Session I) * HKMA Tai Po Community Network - Contemporary BPH Treatment - Insights from Urologist * HKMA CME - Eye Course 2010 **1**	* HKMA Kowloon East Districts - Wuhan Project "Practical Health Informatics Course for Doctors" (Session I) **2**	* HKMA Council Meeting **3**	**4**	* 3rd Table-Tennis Training Course * MPS - Mastering Adverse Outcomes **5**
* HKMA Table-Tennis Tournament * HKMA Charity Wargame 2010 against Law Society of Hong Kong **6**	* HKMA Choir Rehearsal * HK East Community Network - "Update in Asthma Management & Control" **7**	* HKMA New Territories West Districts - Wuhan Project "Practical Health Informatics Course for Doctors" (Session II) * HKMA CME - Eye Course 2010 * HKMA Tai Po Community Network - Practical Tips on Management of Common Urological Diseases * HKMA Kowloon West Districts- Clinical Update Series on Benign Prostatic Hyperplasia and Diabetes Management (Session I) * MPS - Mastering Adverse Outcomes **8**	* When a Mother Meets a Neurosurgeon * HKMA Kowloon East Districts - Wuhan Project "Practical Health Informatics Course for Doctors" (Session II) * HKMA Central, Western & Southern Community Network - "Certificate Course on Management of Common Urological Problems for Primary Healthcare Providers" (Session 3) **9**	* HKMA New Territories West Community Network - "Certificate Course on Mood Disorders" (Session 1) * HKMA Structured CME Programme with Hong Kong Sanatorium & Hospital Year 2010 - Joint Replacement-with Extended Warranty beyond Ten Years **10**	* HKMA Kowloon East Community Network - Update in Management of Degenerative Joint Disease * HK East Community Network - "Clinical Evidence of Quadrivalent HPV Vaccine in Adult Women & Current Trend in Menopausal Treatment" **11**	* 3rd Table-Tennis Training Course * Career Talk **12**
* MPS - Mastering Adverse Outcomes * HKMA Table-Tennis Tournament * HKMA Certificate Course on Family Medicine 2010 **13**	* HKMA Choir Rehearsal * Unusual Prostate Tumours **14**	* HKMA New Territories West Districts - Wuhan Project "Practical Health Informatics Course for Doctors" (Session III) * HKMA CME - Eye Course 2010 **15**	**16**	* FMSHK Executive Committee Meeting **17**	* HKMA - Kowloon East Community Network - Common Oversights in HCC **18**	* 3rd Table-Tennis Training Course * Career Talk * HKMA Kowloon East Community Network - Joint CME Course for Health Personnel 2010 on "1) Management of Neck Pain and 2) Management of Back Pain" * Refresher Course for Health Care Providers 2009/ 2010 **19**
* Annual Scientific Meeting 2010 * MPS - Mastering Adverse Outcomes **20**	* HKMA New Territories West Districts - Wuhan Project "Practical Health Informatics Course for Doctors" (Session IV) * HKMA Choir Rehearsal **21**	* HKMA CME - Eye Course 2010 * HKMA Kowloon West Districts- Clinical Update Series on Benign Prostatic Hyperplasia and Diabetes Management (Session II) * HK East Community Network - Annual Meeting cum CME * MPS - Mastering Adverse Outcomes **22**	* HKMA Kowloon East Districts - Wuhan Project "Practical Health Informatics Course for Doctors" (Session III) * HKMA Central, Western & Southern Community Network - Management of Insomnia and the Use of Hypnotic Medication * HKMA Yau Tsim Mong Community Network - "Updates on the Management of HRT for Menopausal Women" **23**	* HKMA New Territories West Community Network - "Certificate Course on Mood Disorders" (Session 1 & 2) * Certificate Course on Interpretation of Electrocardiography(Code no: TC-ECG-1001) * Certificate Course on Ward Management Module I (Code No. TC-WM-1001) **24** * HKMA Council Election Forum	* Certificate Course on Clinical Teaching and Assessment (Code No: TC-CTA-1001) **25**	* 3rd Table-Tennis Training Course **26**
27	* HKMA Choir Rehearsal **28**	* HKMA CME - Eye Course 2010 **29**	**30**			

Medical Diary of June

Date / Time	Function	Enquiry / Remarks
1 TUE 8:00 pm - 10:00pm	**FMSHK Officers' Meeting** Organiser: The Federation of Medical Societies of Hong Kong, Venue: Gallop, 2/F., Hong Kong Jockey Club Club House, Shan Kwong Road, Happy Valley, Hong Kong	Ms. Paulina TANG Tel: 2527 8898 Fax: 2865 0345
1:00 pm *(8, 15, 21)*	**HKMA New Territories West Districts - Wuhan Project "Practical Health Informatics Course for Doctors" (Session I - IV)** Organiser: The Hong Kong Medical Association, Speakers: Various, Venue: Lecture Theatre, 2/F, Ambulatory Care Center, Tuen Mun Hospital, 23 Tsing Chung Koon Road, Tuen Mun, New Territories	Miss Carman WONG Tel: 2527 8285 1.5 CME Points
1:00 pm	**HKMA Tai Po Community Network - Contemporary BPH Treatment - Insights from Urologist** Organiser: HKMA Tai Po Community Network, Speaker: Dr. SZETO Shek, Venue: Tai Po Chiu Chow Restaurant	Mr. Nixon NIP Tel: 9045 5104 1 CME Point
1:15 pm *(8, 15, 22, 29)*	**HKMA CME - Eye Course 2010** Organiser: The Hong Kong Medical Association, Speakers: Dr. YIP Pui Wai Pian & Dr. CHEUNG Tze On Benson, Venue: The HKMA Dr. Li Shu Pui Professional Education Centre, 2/F, Chinese Club Building, 21-22 Connaught Road Central, Hong Kong	Miss Viviane LAM Tel: 2527 8452 1 CME Point
2 WED 1:00 pm *(9, 23)*	**HKMA Kowloon East Districts - Wuhan Project "Practical Health Informatics Course for Doctors" (Session I, II & III)** Organiser: The Hong Kong Medical Association, Speakers: Mr. Edmund TSE; Mr. Michael CHIU & Mr. Clifford TSE, Venue: Lecture Theatre, G/F, Block F, United Christian Hospital, 130 Hip Wo Street, Kwun Tong, Kowloon	Miss Carman WONG Tel: 2527 8285
3 THU 8:00 pm	**HKMA Council Meeting** Organiser: The Hong Kong Medical Association, Chairman: Dr. H.H. TSE, Venue: HKMA Head Office, 5/F., Duke of Windsor Social Service Building, 15 Hennessy Road, Hong Kong	Ms. Christine WONG Tel: 2527 8285
5 SAT 4:00 pm *(12, 19, 26)*	**3rd Table-Tennis Training Course** Organiser: The Hong Kong Medical Association, Venue: Homantin Sports Centre	Ms. Dorothy KWOK Tel: 2527 8285
6:00 pm *(8, 13, 20, 22)*	**MPS - Mastering Adverse Outcomes** Organiser: The Hong Kong Medical Association, Speakers: Dr. CHEUNG Kit Ying Andy & Dr. Justin CHENG, Venue: The HKMA Dr. Li Shu Pui Professional Education Centre, 2/F, Chinese Club Building, 21-22 Connaught Road Central, Hong Kong	Miss Viviane LAM Tel: 2527 8452 2.5 CME Points
6 SUN 2:00 pm *(13)*	**HKMA Table-Tennis Tournament** Organiser: The Hong Kong Medical Association, Venue: Harbour Road Sports Centre	Ms Dorothy KWOK Tel: 2527 8285
2:30 pm	**HKMA Charity Wargame 2010 against Law Society of Hong Kong** Organiser: The Hong Kong Medical Association, Indoor CQB Centre (tbc)	Ms. Dorothy KWOK Tel: 2527 8285
7 MON 8:00 pm *(14, 21, 28)*	**HKMA Choir Rehearsal** Organiser: The Hong Kong Medical Association, Venue: Rehearsal Hall, Sheung Wan Civic Centre, Hong Kong	Ms. Candy YUEN Tel: 2527 8285
1:00 pm	**HK East Community Network - "Update in Asthma Management & Control"** Organiser: HK East Community Network, Chairman: Dr. CHAN Ka Wa, Speaker: Prof. Kenneth Ross CHAPMAN, Venue: Regal HK Hotel	Miss Alice TANG Tel: 2527 8285
8 TUE 1:00 pm	**HKMA Tai Po Community Network - Practical Tips on Management of Common Urological Diseases** Organiser: HKMA Tai Po Community Network, Speaker: Dr. SZETO Shek, Venue: Tai Po Chiu Chow Restaurant	Mr. Nixon NIP Tel: 9045 5104 1 CME Point
1:00 pm *(22)*	**HKMA Kowloon West Districts- Clinical Update Series on Benign Prostatic Hyperplasia and Diabetes Management (Session I & II)** Organiser: HKMA Kowloon West Community Network, Chairman: Dr. LAM Ngam, Speakers: Dr. HO Shing Chee & Dr. CHAN Lung Wai, Venue: Maxim's Palace, G/F, Shop G27, Luk Yeung Galleria, Tsuen Wan, New Territories	Miss Mabel CHOW Tel: 3189 8770
9 WED 7:30 am	**When a Mother Meets a Neurosurgeon** Organiser: Hong Kong Neurosurgical Society, Chairman: Dr. WK WONG, Speaker: Dr. Rebecca NG, Venue: Seminar Room, G/F, Block A, Queen Elizabeth Hospital, Kowloon	Dr. Gilberto LEUNG Tel: 2255 3368 Fax: 2818 4350
1:00 pm	**HKMA Central, Western & Southern Community Network - "Certificate Course on Management of Common Urological Problems for Primary Healthcare Providers" (Session 3)** Organiser: HKMA Central, Western & Southern Community Network; Department of Surgery, Queen Mary Hospital, Chairman: Dr. HO Kwan Lun, Speaker: Dr. LEUNG Yiu Lam Simon, Venue: The HKMA Dr. Li Shu Pui Professional Education Centre, 2/F, Chinese Club Building, 21-22 Connaught Road Central, Hong Kong	Miss Alice TANG Tel: 2527 8285 1 CME Point
10 THU 1:00 pm *(24)*	**HKMA New Territories West Community Network - "Certificate Course on Mood Disorders" (Session 1 & 2)** Organiser: HKMA New Territories West Community Network, Chairman: Dr. LEE Fook Kay Aaron, Speakers: Dr. LEUNG Wai Ching & Dr. NG Fung Shing, Venue: Plentiful Delight Banquet (元朗喜尚嘉喜酒家), 1/F, Ho Shun Tai Building, 10 Sai Ching Street, Yuen Long, NT	Miss Alice TANG Tel: 2527 8285
2:00 pm	**HKMA Structured CME Programme with Hong Kong Sanatorium & Hospital Year 2010 - Joint Replacement-with Extended Warranty beyond Ten Years** Organiser: The Hong Kong Medical Association, Speaker: Dr. TANG Wai Man, Venue: The HKMA Dr. Li Shu Pui Professional Education Centre, 2/F, Chinese Club Building, 21-22 Connaught Road Central, Hong Kong	Miss Viviane LAM Tel: 2527 8452 1 CME Point
11 FRI 1:00 pm	**HKMA Kowloon East Community Network - Update in Management of Degenerative Joint Disease** Organiser: HKMA Kowloon East Community Network, Chairman: Dr. AU Ka Kui Gary, Speaker: Dr. CHAN Ka Wah, Venue: Lei Garden Restaurant, APM, Kwun Tong, Kowloon	Miss Alice TANG Tel: 2527 8285 1 CME Point
1:00 pm	**HK East Community Network - "Clinical Evidence of Quadrivalent HPV Vaccine in Adult Women & Current Trend in Menopausal Treatment"** Organiser: HKMA HK East Community Network, Speaker: Dr. HON Hing Cheung Edmund, Venue: HKMA Head Office, 5/F., Duke of Windsor Social Service Building, 15 Hennessy Road, Hong Kong	Miss Alice TANG Tel: 2527 8285

Date / Time	Function	Enquiry / Remarks
12 SAT 6:30 pm *(19)*	**Career Talk** Organiser: The Hong Kong Medical Association, Venue: The HKMA Dr. Li Shu Pui Professional Education Centre, 2/F, Chinese Club Building, 21-22 Connaught Road Central, Hong Kong	Ms. Dorothy KWOK Tel: 2527 8285
13 SUN 2:00 pm	**HKMA Certificate Course on Family Medicine 2010** Organiser: The Hong Kong Medical Association, Speakers: Dr. PAK Chi Shing & Dr. LAM Wing Wo, Venue: Queen Elizabeth Hospital, Kowloon	Miss Viviane LAM Tel: 2527 8452 3 CME Points
14 MON 7:30 - 8:30 pm	**Unusual Prostate Tumours** Organiser: Hong Kong Urological Association, Chairman: Dr. Simon C.W. WONG, Speaker: Dr. CHO Chak Lam, Venue: Multi-function Room, G/F, Block D, Queen Elizabeth Hospital, Kowloon	Dr. HUNG Hing Hoi / Ms. Tammy HUNG Tel: 2958 6006 / 9609 6064 Fax: 2958 6076 / 8344 5115 1 CME Point
8:00 pm - 10:00 pm **17 THU**	**FMSHK Executive Committee Meeting** Organiser: The Federation of Medical Societies of Hong Kong, Venue: Council Chambers, 4/F., Duke of Windsor Social Service Building, 15 Hennessy Road, Wanchai, Hong Kong	Ms. Paulina TANG Tel: 2527 8898 Fax: 2865 0345
18 FRI 1:00 pm	**HKMA - Kowloon East Community Network - Common Oversights in HCC** Organiser: HKMA Kowloon East Community Network, Speaker: Dr. CHUI Ka Keung Albert, Venue: Lei Garden Restaurant, APM, Kwun Tong, Kowloon	Miss Alice TANG Tel: 2527 8285 2 CME Points
19 SAT 1:30 pm	**HKMA Kowloon East Community Network - Joint CME Course for Health Personnel 2010 on "1) Management of Neck pain and 2) Management of Back Pain"** Organiser: HKMA Kowloon East Community Network; Hong Kong College of Family Physicans; United Christian Hospital, Chairman: Dr. MA Ping Kwan Danny, Speakers: Dr. LIM Huey Sing & Dr. Regina CHOI, Venue: Lecture Theatre, G/F., Block F, United Christian Hospital, Kowloon	Ms. Gary WONG Tel: 3513 4821
2:30 pm	**Refresher Course for Health Care Providers 2009/ 2010** Organiser: The Hong Kong Medical Association and Our Lady of Maryknoll Hospital, Speaker: Dr. LAU Sze Ting, Venue: Training Room II, 1/F., OPD Block, Our Lady of Maryknoll Hospital, 118 Shatin Pass Road, Wong Tai Sin, Kowloon, Hong Kong	Ms. Clara Tsang Tel: 2354 2440 2 CME Points
20 SUN	**Annual Scientific Meeting 2010** Organiser: Hong Kong Society of Dermatology and Venerology	Ms. Chloe WONG Tel: 2155 8557 / 2116 4348 Fax: 2559 6910 Email: Meeting.hk@asia.cmpmedica.com
22 TUE 6:30 pm	**HK East Community Network - Annual Meeting cum CME** Organiser: HK East Community Network, Venue: HKMA Head Office, 5/F., Duke of Windsor Social Service Building, 15 Hennessy Road, Hong Kong	Miss Alice TANG Tel: 2527 8285
23 WED 1:00 pm	**HKMA Central, Western & Southern Community Network - Management of Insomnia and the Use of Hypnotic Medication** Organiser: HKMA Central, Western & Southern Community Network, Chairman: Dr. YIK Ping Yin, Speaker: Dr. WONG Kai Choi, Venue: The HKMA Dr. Li Shu Pui Professional Education Centre, 2/F, Chinese Club Building, 21-22 Connaught Road Central, Hong Kong	Miss Alice TANG Tel: 2527 8285 1 CME Point
1:00 pm	**HKMA Yau Tsim Mong Community Network - "Updates on the Management of HRT for Menopausal Women"** Organiser: HKMA Yau Tsim Mong Community Network, Chairman: Dr. LAM Tzit Yuen David, Speaker: Dr. LAM Wai Yee Pansy, Venue: Pearl Ballroom, 2/F., Eaton Hotel Hong Kong, 238 Nathan Road, Jordan, Hong Kong	Miss Carman WONG Tel: 2527 8285
24 *(8/7/2010 - 26/8/2010, Thurs) 6:30 pm - 9:30 pm* *(8/7/2010 - 26/8/2010, Thurs) 6:30 pm - 9:30 pm* **THU** *9:00 pm*	**Certificate Course on Interpretation of Electrocardiography (Code no: TC-ECG-1001)** Organiser: College of Nursing, Hong Kong	Secretariat Tel: 2572 9255 Fax: 2838 6280 24 CNE/PEM Points
	Certificate Course on Ward Management Module I (Code No. TC-WM-1001) Organiser: College of Nursing, Hong Kong	Secretariat Tel: 2572 9255 Fax: 2838 6280 24 CNE/PEM Points
	HKMA Council Election Forum Organiser: The Hong Kong Medical Association, Venue: HKMA Head Office, 5/F., Duke of Windsor Social Service Building, 15 Hennessy Road, Hong Kong	Ms. Christine WONG Tel: 2527 8285
25 *(2/7/2010 - 3/9/2010 6:30 pm - 9:30 pm)* **FRI**	**Certificate Course on Clinical Teaching and Assessment (Code No: TC-CTA-1001)** Organiser: College of Nursing, Hong Kong	Secretariat Tel: 2572 9255 Fax: 2838 6280 24 CNE/PEM Points

Meetings

10/7/2010	**Hong Kong Surgical Forum - Summer 2010** Organisers: Department of Surgery, The University of Hong Kong, Queen Mary Hospital & Hong Kong Chapter of American College of Surgeons, Venue: Underground Lecture Theatre, New Clinical Building, Queen Mary Hospital, Pokfulam, Hong Kong, Enquiry: Forum Secretary, Hong Kong Surgical Forum, Tel: 2255 4885 / 2255 4886, Fax: 2819 3416, E-mail: hksf@hku.hk, Web-site: http://www3.hku.hk/surgery/forum.php

Answer to Dermatological Quiz

Answer:

1. Chronic Graft versus host disease (GVHD), sclerodermoid form

2. In acute GVHD (<3 months after bone marrow transplant), erythematous morbilliform, scarlatiniform or toxic epidermal necrolysis can occur. In chronic GVHD (>3 months after transplant), lichenoid, sclerodermoid, poikilodermic or lupus erythematosus-like eruption can occur. Early detection of GVHD is important for survival as skin is the first and most common system of involvement, often before gastrointestinal and hepatic derangement. In practice, the main differential diagnoses are infection and drug eruption since the patients are usually on immunosuppressive drugs. Immediate diagnosis of GVHD however is often not possible because its clinical features can be variable and non-specific. Furthermore, skin biopsy may not always be useful and it cannot be distinguished from drug reaction. Often the biopsy is mainly used to rule out other infections. Blood eosinophilia also does not equate drug reaction. In general, close examination and follow-up of the clinical features are more useful than biopsy to determine the cause.

3. If GVHD is suspected, immunosuppressives should be started, as delay will cause irreversible damage to the gut and liver. In the acute form, prednisolone and anti-thymocyte globulin are used. In the chronic form, prednisolone, azathioprine, thalidomide and phototherapy are used. Though phototherapy may be useful in the lichenoid form, it is usually not effective in the sclerodermoid form. For prophylaxis, cyclosporine, methotrexate and prednisolone are used.

Dr. Lai-yin CHONG

MBBS(HK), FRCP(Lond, Edin, Glasg), FHKCP, FHKAM(Med)

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References: 1. Heise T, Nosek L, Ronn BB *et al*. Lower within-subject variability of insulin detemir in comparison to NPH insulin and insulin glargine in people with type 1 diabetes. *Diabetes* 2004; 53(6): 1614-1620. **2.** Russell-Jones D, Bolinder J, Simpson R. Lower and more predictable fasting blood glucose and reduced risk of nocturnal hypoglycaemia with once daily insulin versus NPH in subjects with type 1 diabetes. *Diabetologia* 2002; 45(Suppl 2): A51. **3.** Hemansen K, Fontaine P, Kukolja KK *et al*. Insulin analogues (insulin detemir and insulin aspart) versus traditional human insulins (NPH insulin and regular human insulin) in basal-bolus therapy for patients with type 1 diabetes. *Diabetologia* 2004; 47(4): 622-629. **4.** De Leeuw I, Vague P, Selam JL *et al*. Insulin detemir used in basal-bolus therapy in people with type 1 diabetes is associated with a lower risk of nocturnal hypoglycaemia and less weight gain over 12 months in comparison to NPH insulin. *Diabetes Obes Metab* 2004; *in press*. **5.** Home P, Bartley P, Russell-Jones D *et al*. Insulin detemir offers improved glycemic control compared with NPH insulin in people with type 1 diabetes: a randomized clinical trial. *Diabetes Care* 2004; 27(5): 1081-1087. **6.** Pieber T, Grill V, Kristensen A *et al*. Treatment with insulin detemir allows flexible timing of administration in subjects with type 1 diabetes. *Diabetes* 2003; 52(Suppl 1): A130. **7.** Haak T, Tiengo A, Waldhäusl W *et al*. Lower within-subject variability of fasting blood glucose and reduced weight gain with insulin detemir compared to NPH insulin in patients with type 2 diabetes. *Diabetes Obes Metab* 2004; *in press*. **8.** Levemir® Abbreviated SPC, June 2004.

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