

# 香港醫訊



## THE HONG KONG MEDICAL DIARY

OFFICIAL PUBLICATION FOR THE FEDERATION OF MEDICAL SOCIETIES OF HONG KONG

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### Editorial

- **Age is More Than Just a Number** *Dr. Raymond SK Lo*

### Medical Bulletin

- **Managing Elderly Patients with Multiple Morbidities - Are We Providing Patient-Centred Care?** *Prof. Jean Woo*
- **Frailty in Older People** *Dr. Felix HW Chan*
- **Mild Cognitive Impairment: A Clinical Approach** *Dr. David LK Dai*
- **Clinical Management of Behavioural and Psychological Symptoms of Dementia** *Dr. Karen HY Wat*
- **Management of Common Respiratory Infections in Residential Homes** *Dr. Yee-ming Wu*

### Drug Bulletin

- **Update on Treatment of Osteoporosis** *CME* *Prof. Timothy Kwok*

### Life Style

- **Health Care Professionals in the Ageing Era** *Dr. Edward MF Leung*

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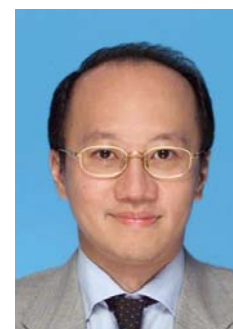
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# Age is More Than Just a Number

## Dr. Raymond SK Lo

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**Editor**



Dr. Raymond SK Lo

Time flies and this Sept issue marks the second issue on Geriatrics for our Medical Diary. Our Hong Kong population is continuing ageing and ageing fast. Mainland China is facing an even bigger challenge as a greying nation. Is our modern health care now better equipped for this major social transformation? Preservation of health across the lifespan is the ideal. One can still be healthy at the good old age of a hundred. So is age just a number?

An ageing process free of morbidity is not yet a blessing for all. Professor Jean Woo discusses in her article the art and science of managing elderly patients with multiple morbidities. Frailty syndrome is another illustration where the role of Geriatrics as a specialty is clearly manifested. Dr Felix Chan gives an update on the current concepts and management of frailty. Although the phenotypes of frailty will no doubt need further review, the evidence of benefit from targeted interventions is accumulating. It is notable that measures to maintain our quantum of homeostatic reserves against the various physical and environmental insults causing frailty, should start early rather than at the age of 60 or 65.

This September 21st is World Alzheimer's Day. Our issue supports with an article on the evolving concepts of mild cognitive impairment and dementia risks by Dr David Dai; and an article by Dr Karen Wat on the drug management of behavioural and psychological symptoms of dementia. While the cognitive reserve hypothesis proposes that people with higher education can cope better with intellectual decline, there are other early and mid-life factors or health behaviour, independent of social economic position, which if promoted can help towards successful ageing. Social inequalities may exist, yet for the elderly with medical non-adherence and self-neglect, our active engagement is never too late in preventing suffering and indignity. For those with established dementia and symptoms, non-pharmacological methods with environmental modification and behavioural interventions can be simple and effective.

The curriculum of geriatric medicine is broad and covers wide-ranging topics. Professor Timothy Kwok updates on the drug treatment for osteoporosis in older people. Dr YM Wu covers the management of common respiratory infections in residential homes. Long term care, advance planning, and end-of-life care remain to be our challenges, and need to be covered in future Geriatric issues.

Age is more than just a number but a continuum. Healthy ageing is possible, and an increasing number of older people are now living the compression of morbidity pattern espoused by JF Fries 28 years ago. What age is old will likely to remain a perennial debate. An arbitrary demarcation may yet remain, and we conclude with an article by Dr MF Leung on how health care professionals can positively approach ageing and retirement. Philosophical views of ageing do not need to be diametrically opposite, with extreme veneration or denial with rejection. Quoting the ancient writer Joannes Stobaios on history of gerontology, "Both Plato and Pythagoras taught that old age is not life's swansong, but the beginning of blessed existence".



# Managing Elderly Patients with Multiple Morbidities - Are We Providing Patient-Centred Care?

**Prof. Jean Woo**

Professor of Medicine, The Chinese University of Hong Kong  
Hon. Chief of Service (G), Shatin Hospital



Prof. Jean Woo

Elderly patients often have more than one chronic disease, so that management seldom focuses on a single disease. Furthermore, diseases could also be substituted by the geriatric syndromes of falls, immobility, incontinence, and cognitive impairment. In practice the clinician often manages a combination of diseases and syndromes. This article discusses the geriatric perspective to managing multiple morbidities, the need for 'art' and 'science' in management, and suitable approaches on the part of the patient, health and social care professionals, and health and social care systems.

## The Geriatric Perspective

Multiple morbidities may be considered as part of the frailty phenotype, representing a transitional state from robustness, to functional dependence, to death. Symptoms of frailty consist of weight loss, weakness, fatigue, anorexia, and inactivity; signs consist of undernutrition, slow gait speed, balance abnormalities, sarcopenia (or loss of appendicular muscle mass) and osteoporosis. Frailty often results in repeated falls, multiple trauma, functional decline, disability, hospitalisation, infection, institutional care, and ultimately death. It causes considerable suffering on the part of the patients as well as carers. Unlike management of single diseases, there is a need for the biomedical model to be extended to include daily function, surroundings (family, friends, community, health and social care systems), ethical considerations, and quality of life, underpinned by interdisciplinary continuity of care. It should be recognised that this continuity of care in the downward trajectory towards death covers health promotion, focused prevention, an approach to the pathological process that is care rather than cure, rehabilitation that is predominantly maintenance rather than restorative, palliative care, terminal care, and the mourning process of survivors. Key ethical considerations arise in the balance between therapeutic withdrawing and therapeutic harassment that are influenced by culture and beliefs, the professional and legal framework of the country in question, and the level of professional as well as public education.

## The 'Art'

Unlike science, which is concerned with the general and deals with repeatable elements in nature, medicine is concerned with the uniqueness of individual patients. People are shaped by differences in culture, ethnicity,

socioeconomic strata, and past experiences. Elderly people are particularly variable in their ability to cope with changing personal and the wider social environment. This perspective would be better highlighted if the term "disease" were to be replaced by the term "illness experience". This distinction would be a useful strategy to be incorporated into teaching and practice, to deal with major health care problems such as patient dissatisfaction, inequity of access to care, and spiraling costs, all of which do not seem to be amenable to biomedical solutions.

*"Biomedicine has increasingly banished the illness experience as a legitimate object of clinical concern. Carried to its extreme, this orientation, so successful in generating technological interventions, leads to a veterinary practice of medicine"<sup>1</sup>*

Illness perception is a key determinant of behaviour directed at managing illness. Negative illness perceptions are associated with poorer recovery and increases health care use independent of objective measures of illness severity. Interventions to change illness perceptions can reduce disability and improve functioning.<sup>2</sup> There is a need to treat patients rather than the disease, understanding their illness perception, and adopting an expanded model of illness to include the impact on patients' carer and families.

## The 'Science', or Evidence-based Medicine

Availability of evidence is a problem in the management of multiple diseases and syndromes, since randomised controlled trials tend to be for single disease in 'fit' and 'young old' subjects who could travel to the trial centre and adhere to the trial regime. The profile of such subjects does not fit the frail elderly population aged 80 years and over, that many geriatricians look after. In practice results from such trials may be inappropriately extrapolated to the frail elderly population who are often encountered in clinical practice. For example, an article in the British Medical Journal eloquently entitled "The road to hell" pointed out that the application of targets for managing elderly people with diabetes in general practice in the UK, using guidelines from two large clinical trials with few frail elderly subjects, has resulted in many adverse outcomes. The problems with randomised controlled trials for common diseases affecting the elderly include inadequate representation for the very old (treatment of



acute coronary syndromes<sup>3</sup>, cholesterol lowering therapy in diabetes<sup>4</sup>), and insignificant results in age subgroup analysis (risedronate in hip fracture risk reduction in women aged  $\geq 80$  years<sup>5</sup>, long term ACE-inhibitor therapy in heart failure<sup>6</sup>).

## Paradigm Shift

Management of chronic diseases in the elderly is primarily a primary care issue, where quality of care, rather than cure, is the outcome of concern, and where system changes in the health and social care sectors are indicated. Concepts to be incorporated include health promotion, self-management, management of high risk patients, case management for high complexity cases, and knowledge management in terms of population needs assessment and service planning. Currently in Hong Kong services are heavily hospital based, resulting in limited accessibility as well as increased costs. There is poor continuity of care and community self-help is poorly developed. There are emerging needs of elderly living in residential care homes. Palliative care in all settings is poorly developed. The interface between multiple service providers (social welfare department, Department of Health, Hospital Authority, Community Rehabilitation Network, and the private sector) is less than ideal. There is increasing financial burden on health care systems and sustainability likely depends on active participation by individuals, for both prevention and management. There is absence of a primary care system that can effectively reduce demands on secondary and tertiary care.

New approaches involve changes on the part of patients, professionals, as well as systems. On the part of patients, the paradigm shift includes taking ownership of their problems with health professionals as partners, a move towards self-management supported by professionals and health and/or social care systems in the community. Programmes can be designed to help patients manage symptoms and contain health care resource utilisation. At present such programmes have only been developed for selected single chronic diseases such as diabetes or asthma. None has been tried for multiple diseases or frailty. Major barriers to be addressed in promoting self-management include patient factors that promote continuing participation, and professional factors that include a cultural change away from a purely medical model of management. Use of a stepped care approach and development of nurses as leaders in chronic care, especially in end of life care, following the principle of patient-centred supportive care and understanding patients' perspectives, are directions that could be developed. With regard to systems, the development of case management in the primary care setting would be appropriate, in removing barriers to coordinated care. In the US, the Evercare model has been developed, consisting of collaboration with general practitioners, other health and social care professionals in primary care, and expanded nursing role in proactive managed care for patients at high risk for repeated hospital admissions and decline in function. A team based approach is adopted, with risk stratification using predictive tools to identify high risk patients, self-management and motivational interviewing. This

model has resulted in fewer hospitalisations and fewer prescription drugs, higher patient satisfaction with no change in mortality. However this model has not produced the same results when adopted in the UK.

A similar model could be developed for management of multiple morbidities and frailty by adopting these principles to the ageing population. Case management is particularly relevant as functional, social, psychological, and nutritional dimensions need to be incorporated in addition to dysfunction of organs. Furthermore the patient needs to be considered as part of a discrete social network. The main goal is maintenance rather than restorative with respect to function, and maximizing quality of life. Development of such programmes for groups may have the advantage of mutual support, allow incorporation as part of a regular social (and therefore enjoyable) programme rather than 'rehabilitation sessions'; allow constant reinforcement of information and correction of misconceptions, and incur lower cost compared with one-to-one interaction. Community centres could form the nucleus of such programmes, together with other health promotion activities.

## Key Points

- Multiple morbidities in ageing populations could best be regarded in the context of the frailty syndrome for management
- Management requires a humanistic as well as evidence-based approach, taking into account the patient's perspective.
- There is little evidence to formulate guidelines for frail elderly populations: available evidence should be extrapolated with caution
- Health and social care system change is needed to cope with multiple morbidities, driven by patients' needs as well as budgetary considerations

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## The Federation's Annual Scientific Meeting

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### 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](http://www.rcpch.ac.uk)

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\*\*心臟病，糖尿病，癌症等病患者均宜使用

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1. Theuwissen E, Mensink RP. Water-soluble dietary fibers and cardiovascular disease. *Physiol Behav.* 2008 Jan 5
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# Frailty in Older People

## Dr. Felix HW Chan

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Dr. Felix HW Chan

## Introduction

The number of older people is increasing worldwide, and in less than 30 years, one in four of the population in Hong Kong will be aged over 65. Chronological age is often linked with frailty, but there can be wide variations between individuals of the same age. There are, in fact, many community dwelling older people leading a full and active life. A recent Japanese Centenarian Study identified nine factors related to being an autonomous 100 year-old, including good visual acuity, regular exercise, spontaneous awakening in the morning, preserved mastication, no history of drinking alcohol, no severe falls, frequent protein intake, living at home, and being male<sup>1</sup>.

Despite a dramatic increase in the use of the term 'frailty' among health professionals, there is still a lack of consensus in the literature on its meaning, and there are no widely accepted conceptual guidelines for identifying older adults as frail. However, instead of being an unavoidable consequence of advancing chronological age, frailty has been well recognised as an independent geriatric syndrome<sup>2</sup>.

## What is Frailty?

Gerontologists over the years have attempted to distinguish the effects of 'true' ageing from the effects of age-related diseases. Frailty, a clinical presentation, has been recognised which is characterised by 'a multi-system reduction in physiological capacity'<sup>3</sup> and not necessarily related to a specific single disease process. In the old days, 'one man, one disease' was frequently taught in medical schools, but this term is no longer applicable to the vast majority of our older patients.

Frailty is best defined as a syndrome which results from a multi-system reduction in reserve capacity to the extent that a number of physiological systems are close to, or past, the threshold of symptomatic clinical failure. As a result, the frail person is at increased risk of disability and death from minor external stresses<sup>4</sup>. This definition embeds the meaning of a variety of previously used terms to describe this syndrome, such as loss of reserve, feebleness, vulnerability, and incorporates the concept of failure of homeostasis in the broad sense.

The clinical characteristics of frailty are unintentional weight loss, exhaustion, low energy expenditure,

slowness, and weakness according to the Fried criteria<sup>5</sup>. Underlying mechanisms arise from decline in the molecular, cellular and physiological systems of the ageing body involving the muscles, bone, circulation, hormonal and immune systems. All these could lead to adverse health outcomes such as fluctuating disability, dependency, the need for long term care, and mortality. The natural course of frailty is progressive, increasing the risk of co-morbidity and disability over time.

Primary frailty is defined when the condition is not associated with a specific disease, or when there is no substantial disability; secondary frailty when the syndrome is associated with known comorbidity such as dementia or overt cardiovascular disease<sup>6</sup>.

Frailty represents a body-wide set of linked deteriorations that occurs with ageing. There is general agreement that the concept of frailty should be multi-dimensional, covering disease, function, cognition, and nutrition<sup>7</sup> and is susceptible to intervention and potentially reversible. Further, this concept has been extended to cover the broader environment, including considerations such as poverty and isolation, in addition to individual factors. In a recent local study of 2,032 people aged 70 years and over, increasing frailty in men was observed with non-white collar occupations, inadequate expenses, no or little exercise, abstinence from alcohol, few relatives or neighbours and no/or infrequent participation in helping others. For women, little contact with relatives and the absence of participation in community/religious activities were additional social determinants of frailty<sup>8</sup>.

## Measurement of Frailty

The validity of frailty as a concept has been shown in its ability to predict death, health status, functional decline, and use of health services. The public health implications of frailty have been recognised as a significant and modifiable economic burden on health care services<sup>9</sup>. In this regard, the desirable goals of prolonging longevity and compressing morbidity at the same time are to delay the onset of frailty. Moreover, underlying conditions such as sarcopenia and malnutrition may be amenable to health interventions<sup>10</sup>. Therefore, the measurement of frailty would potentially be an important public health indicator, as well as an outcome indicator monitoring the results of health intervention.



The concept of a Frailty Index, originally developed in a cohort of Canadian elderly population by Rockwood<sup>11</sup>, was tested in a local Chinese population by Woo et al. A data set of 62 variables, which cover physical health, objective disease burden, use of drugs, cognitive functioning, mobility difficulties, dependency in activities of daily living, self-esteem, depression, malnutrition and body mass index, blood pressure, life-style factors and physical performance measures, was constructed in the calculation of the Frailty Index applicable in Hong Kong. A biological age (BA) can be computed based on an inverse regression of age on mean frailty index and sex<sup>12</sup>.

$$BA = [6.06 + 8.14 * \sqrt{-0.23 * sex}]^2$$

The following table is a summary of the list of variables of the Frailty Index:

1	MSCORE	Mental Score < 7
2	DEPSCOR	Geriatric Depression Score 8 +
3	HEALTH	Self-perceived physical health not quite good/poor
4	GP	Doctor consultation in the past year 3 + times
5	HOSPITAL	Hospital admission in the past year 2 + times
6	DRUGNO	No. of drug use 1-4
7	DRUGNO	No. of drug use 5 +
8	HEARING	Difficulties with hearing
9	VISION	Difficulties with vision
10	CHEWING	Difficulties with chewing
11	WGTI	Weight loss 5 ≥ lbs in past year
12	PMH1	Past medical history: cerebrovascular diseases
13	PMH2	Past medical history: Parkinson diseases
14	PMH3	Past medical history: cardiac diseases
15	PMH4	Past medical history: hypertension
16	PMH5	Past medical history: chronic bronchitis
17	PMH6	Past medical history: asthma
18	PMH7	Past medical history: tuberculosis
19	PMH8	Past medical history: peptic ulcer
20	PMH9	Past medical history: diabetes mellitus
21	PMH10	Past medical history: arthritis
22	PMH11	Past medical history: old fracture
23	PMH12	Past medical history: dementia
24	PMH13	Past medical history: psychiatric problems
25	PMH14	Past medical history: malignancy
26	PMH15	Past medical history: other diseases
27	SYMPTOM1	Headache in the past month
28	SYMPTOM2	Dizziness in the past month
29	SYMPTOM3	Heart palpitation in the past month
30	SYMPTOM4	Worsening of memory in the past month
31	SYMPTOM5	Constipation in the past month
32	SYMPTOM6	Stomach pain in the past month
33	SKEL	Have joint pain
34	FALL	Falls in the past year: 1-2 times
35	FALL	Falls in the past year: 3 + times
36	CHESTPN2	Have chest pain while walking uphill or briskly
37	CHESTPN3	Have chest pain while walking on level ground
38	BREATH3	Cannot walk for 1 mile
39	BREATH4	Cannot walk for 100 yards
40	BREATH6	Feel breathlessness while lying flat in bed
41	SWELL	Swelling in leg in the past month
42	COUGHBLD	Cough blood in the past month
43	WHEEZE1	Wheezing or whistling in chest in the past year
44	WHEEZE2	Woken up with a feeling of tightness in chest in the past year
45	BREATH8	Breathless when not doing anything stern
46	BREATH9	Woken at night by attack of breathlessness
47	PHLEGM1	Bring up phlegm in the morning
48	PHLEGM2	Cough up phlegm for 3 consecutive months for 2 years

49	ADL1	Dependent in feeding
50	ADL3	Dependent in personal grooming
51	ADL7	Dependent in chair/bed shifting
52	ADL9	Dependent in walking
53	ADL11	Dependent in walking up/down stairs
54	ADL13	Dependent in using toilet
55	ADL15	Dependent in bathing
56	ADL17	Urinary incontinence
57	ADL19	Bowel incontinence
58	BP1	Systolic blood pressure > 140 mmHG
59	BP2	Diastolic blood pressure > 90 mmHG
60	BMI	Body mass index < 18.5kg/m2
61	GAIT1	Need a walking aid usually
62	GAIT5	Walking unsteadily or stagger

### Management of Frailty in Older People

Some physicians may regard frailty as an example of "medicalisation" of old age, and are skeptical about the significance of its prevention and intervention. However, it is of vital importance to recognise some important issues: first, the recognition of the association of frailty with chronic inflammation<sup>13</sup> and vascular disease<sup>14</sup>, second, the establishment of the possibilities for prevention and their effectiveness, and third, the identification of the underlying causes of frailty, particular those which are potentially reversible.

Although prospective longitudinal studies of the association between cardiovascular risk and frailty will take a long time to emerge, management of sub-clinical and clinical cardiovascular disease are relevant. Frailty is known to commonly co-exist with heart disease and is associated with an inflammatory state. For primary prevention and treatment of frailty in older people, the syndrome should be recognised and treated early. Healthy life-style, including exercise to preserve and increase muscle mass and strength; adequate nutrition, addressing protein-energy malnutrition and vitamin deficiency in specific populations, are first-line treatments for primary frailty. As for those with secondary frailty, a multi-disciplinary, holistic care of the underlying diseases and disabilities, and palliative care in the later stage of frailty are essential. Moreover, appropriate management of pain and depression should be provided, and optimal care of the giants of Geriatrics, including falls and instability, incontinence, intellectual failure, iatrogenic diseases and rehabilitative services should be organised for the frail elderly. Furthermore, immunisation for influenza and pneumococcal pneumonia has been shown to decrease mortality and hospitalisations.

Down the pipe-line are drugs for treatment of primary frailty, which are still under investigations - anti-inflammatory and anabolic agents, psycho-stimulants and selective androgen-receptor modulators for the ageing men and various Chinese medicines etc. However, one should assess the balance between the risks & benefits of these treatments. For example, megestrol may be used to stimulate appetite and weight gain, but it could decrease the benefits of strength training compared to those in the control group<sup>15</sup>. Although promising, the long term effectiveness of commonly prescribed cardiovascular drugs such as angiotensin II antagonists, as well as the lipid-lowering drugs such as the statins with their anti-inflammatory and anti-atherosclerotic effects, in the prevention of frailty still remains to be established.



No review on the subject would be complete without consideration being given to psycho-social aspects of an older adult's interactions with his or her environment. Not only do psycho-social factors predict adverse outcomes such as decline in function and mortality, many of these factors are modifiable and could be targeted in interventional programmes for frail older people<sup>8</sup>. Clinicians should work closely with a team of nursing, allied health and social workers to care for the physical, psycho-social and spiritual needs of the frail older people.

## Conclusion

Frailty depicts a body-wide set of linked deterioration that occurs with advancing age, and may be regarded as a dynamic state of balance between assets and deficits including physical, functional, psychological, nutritional and social domains. Frailty can be identified clinically by a comprehensive geriatric assessment. Defining and measuring frailty helps identify at-risk older adults who may benefit from public health or individual health intervention or maintenance programmes. Physicians should have the skills of identifying and measuring the key components of frailty and recognising those which are reversible and amenable to active treatment.

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## Clinical Quiz



## Clinical Quiz

**Dr. Wendy WM Lam**

*Consultant, Department of Radiology, Queen Mary Hospital*



Dr. Wendy WM Lam

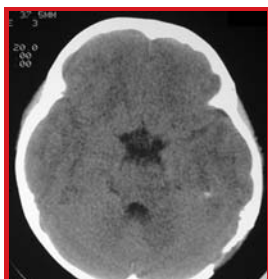


Fig 1



Fig 2

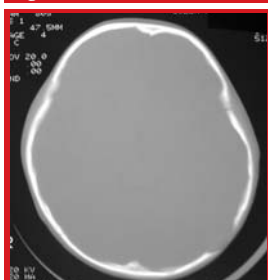


Fig 3

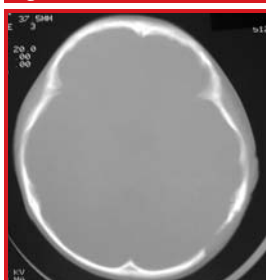


Fig 4

### Clinical History:

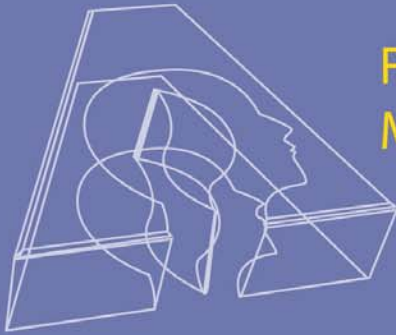
Female/14

Has known systemic disease and skin lesions.  
This is her screening non-contrast CT brain.  
She was asymptomatic.

### Questions:

1. What are the radiological findings ?
2. What is your diagnosis or DDX ?

*(See P.22 for answers)*



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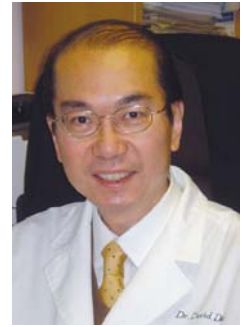


# Mild Cognitive Impairment: A Clinical Approach

**Dr. David LK Dai**

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Dr. David LK Dai

## The Clinical Problem

Increasing numbers of elders from 70 years and above will be brought to see the doctor for memory or cognitive impairment of a mild nature for 1-2 years. The clinical questions are "Is my patient suffering from dementia in the earliest stage?"; "How do I investigate the patient?"; "Shall I start treatment?"; and "How shall I explain to the patient and the family members who have brought the patient to me?".

## The Concept of Mild Cognitive Impairment (MCI)

The concept of MCI is a useful concept which represents a stage of deteriorating cognition overlapping the boundaries between normal memory and dementia. MCI indicates the pre-dementia stage in an affected person.<sup>1</sup> However, the concept is difficult to apply clinically, because cognitive impairment is common in elders and can remain stable or improve with time. Most studies of MCI have included subjects according to the clinical criteria of Petersen of 2001, (i) memory complaint preferably corroborated by an informant, (ii) objective memory impairment for age and education, (iii) preserved general cognition, (iv) preserved activities of daily living, and (v) clinically not meeting the criteria of dementia. Using MMSE in a person with substantial education, the score is 24 or above.<sup>2</sup> These studies show a progression rate of 10-15% into dementia usually referring to Alzheimer's disease (AD). Higher conversion rates are seen in clinically selected samples.<sup>3,4</sup>

## Heterogeneity in the Concept of Mild Cognitive Impairment

Mild cognitive impairment in an older person has been recognised under different descriptions, as benign senescent forgetfulness (Kral, 1962), age-associated memory impairment, AAMI (Crook et al, 1986), age-associated cognitive decline, AACD (Levy, 1994), cognitive impairment, no dementia, CIND (Graham et al, 1997) and mild cognitive impairment, MCI.<sup>5</sup> How much the criteria will also include normal persons depend on the specificity of the cognitive function being studied and its reference norm. For example, AAMI will include many normal persons because the memory impairment is compared with young samples; AACD is more specific for indicating the predementia state because reference is drawn to peer norms, but also

includes substantial normal patients because other cognitive domains than memory are included. CIND carries a similar problem of inclusion of impairment in more than one cognitive domain. Petersen narrows down the concept to memory impairment compared to 1.5 standard deviation below peer norms in psychometric tests and coined the term MCIa to indicate the predementia stage of Alzheimer's disease where memory (amnesic) is affected in the early stage.

## Refinement of Definition to Increase Clinical Relevance

Since emergence, the MCI concept has been criticised to be uncertain, ambiguous, poorly conceptualised and labelling a normal person with a detrimental disease.<sup>6</sup> The latter carries significant emotional, ethical and legal consequences. Gauthier has additionally pointed out the variable prevalence (3-16.8%) and poor efficacy of cholinesterase inhibitors in the treatment of the condition as a clinical predementia state.<sup>7</sup> Petersen argued on the other hand that heterogeneity prompted refinement of the entity and characterisation of the prodromal state of different types of dementia. The concept also offered an opportunity to treat reversible factors of cognitive impairment, and to provide counselling. MCI indicates advancing the diagnostic threshold to the earlier stage of impairment of dementing illnesses.<sup>7</sup> Hence, Petersen has clarified MCI to focus on a significant change in performance in the person ideally corroborated by an informant, to take into consideration educational factors and other non-memory cognitive domains such as language, executive function and visuo-spatial ability. Petersen considers clinical judgment from the history to remain the mainstay of diagnosis and to recognise the clinical significance of mild cognitive impairment in the person but being still more "normal" than dementia.<sup>8</sup>

## Impairment in Non-cognitive and Multiple Domains

While prodromal AD starts with predominantly memory impairment, progression to disease will involve semantic and attentional cognitive domains and subsequently generalised decline. The prodromal stage of non-AD can involve a non-amnesic domain and transition to disease will affect other cognitive domains. Figures 1 and 2<sup>8</sup> summarise the approach to MCI according to the presentation of impairment in single, multiple and different domains. Overall, the conversion

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Mum and Dad at Pei Shi's 8<sup>th</sup> birthday

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over placebo). **Uncommon adverse reactions (0.1-1%):** Fatigue, confusion, hallucinations (mainly in severe AD), vomiting, abnormal gait. Very rare adverse reactions (<0.1%). **Seizures** **Posology:** Maintenance dose is 20 mg, (10 mg twice daily) taken with or without food. Treatment starts with 5 mg in the morning for a week; the 2nd week 5 mg twice daily; the 3rd week 10 mg in the morning and 5 mg in the afternoon or evening and from 4th week 10 mg twice daily. Reduce dose to 5 mg twice daily in patients with moderate renal impairment. **Overdose:** Symptomatic treatment. **Elimination:** Mainly in unchanged form via the kidneys. **Administration:** Orally as tablets (10 mg) or solution (10 mg/g). **Marketing authorisation:** H. Lundbeck A/S, 9 Ottiliavej, DK-2500 Valby, Denmark.

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rates differ markedly in different subtypes of MCI indicating the varying underlying aetiopathologies. Multiple domains involvement at inception denotes conversion of 30% in 2 years, and a single non-amnestic domain confers a rate of only 4%; non-amnestic multiple domains increases the likelihood of non-AD.<sup>9</sup> Previous stroke and impairment in instrumental activities of daily living increases the risk of progression to dementia in an Italian cohort of CIND and MCI.<sup>10</sup>

## Narrowing Down the Ambiguities with Biomarkers

Clinical history can at best define a group of persons with significant decline in cognitive function in varying domains in the past 1-2 years and will put the client in the high risk category in developing a dementing illness. However the patient and family members expect a more definite diagnosis of possible disease. The accuracy of diagnosis of prodromal disease can be enriched with biomarkers. A full array of such markers are available, but the applicability is constrained by accessibility and cost such as advanced neuroimaging and detailed neuropsychology, invasive nature of the test such as CSF analysis, and overlap of abnormal test results with normal.<sup>11</sup>

MR volumetry of hippocampal atrophy predicts disease.<sup>12</sup> A higher ventricular/brain ratio (VBR) increases progression indicating underlying vascular burden. Different rates of decline in individuals is also related to underlying brain reserve eg education raises brain reserve and MCI may already indicate significant neuropathological burden and may pursue a more rapid decline. A higher VBR in persons with low brain reserve may progress to dementia without an obvious MCI stage.<sup>13</sup>

MRSpectroscopy also provides an affordable option in demonstrating metabolic changes in different dementing illnesses. N-acetyl Aspartate (NAA) and myo-inositol (mI) patterns vary in different diseases. A reduction in NAA combined with hippocampal volume can be a surrogate marker of AD progression; mI is raised in AD and FTD in the prodementia stage.<sup>14</sup>

CBF SPECT is useful in characterising non-AD in the prodromal stage. Fig 3 demonstrates hypoperfusion in the left fronto-temporal region in a 57 year old housewife presenting with speech impairment. The CDR (clinical dementia rating) score was 0.5 indicating normal daily functioning compatible with the MCI stage of FTD. She developed sudden emergence of artistic ability which has been reported in about 15% of FTD patients.<sup>15</sup> Fig 4 demonstrates perfusion defects in the right occipital lobe in a 68 year old gentleman with subtle cognitive decline for 2 years; MMSE registered at 26/30 with secondary education. In a delirious episode from urinary retention and infection, the patient developed visual hallucinations and vividly described ants crawling on the hospital walls. Family members reported that the patient had screamed out in his sleep compatible with REM behavioural disorder. CDR on recovery was 0.5 compatible with the MCI stage of DLB.

FDG (Flurodeoxyglucose) PET can provide characteristic perfusion patterns in aiding diagnosis. Direct imaging of amyloid burden with PIB (Pittsburg Compound B) using

PET offers a promising tool in characterising amyloid burden in different AD stages and different patterns in non AD.<sup>16</sup> A study of small numbers of different diseases showed increased PIB uptake in AD with elevated cortical binding and lesser in DLB; 60% of 9 MCI subjects showed AD pattern but the rest showed normal uptake. In 27 healthy subjects, 22% also showed increased cortical uptake. Increased binding is also seen in APOE  $\epsilon$ 4 carriers. Uptake is absent in the 6 FTD patients.<sup>17</sup> A more recent study showed that both FDG and PIB showed high diagnostic accuracy of 94% in differentiating established AD from normal. In classifying MCI, FDG was superior to PIB. Combining the two techniques increases the accuracy of both in classifying MCI.<sup>18</sup>

CSF tau and amyloid A $\beta$ 42 have been studied as a biomarker. The latter can differentiate AD from non-demented elders with sensitivity and specificity of 90%. MCI shares a similar CSF pattern but with lower sensitivity. The concern is the application of a rather invasive procedure to a person in a still clinically "normal" state. At the moment, CSF markers remain a research tool.

The trend however is to consider MCI as a pathological prodementia clinical state and accurate diagnosis needs to be enriched with biomarkers. We await further evidence for the approach to be practised in the clinical setting.

## The Importance of Diagnosis of Incipient Dementia

Increased awareness to the true incipient stage of dementia by a clinician will avoid premature diagnosis of dementia and misdiagnosis such as depression. At the same time, false reassurance of normal ageing should also be avoided. An opportunity is provided for comprehensive evaluation of underlying illnesses and medical diseases. Final rapid decline into AD is associated with comorbid medical conditions and optimisation may delay the rapid progression into clinical disease.<sup>19</sup> It is important to recognise cardiovascular risks in MCI. HbA1c > 7 increases risk of AD four fold.<sup>20</sup> White matter disease is associated with MCI.<sup>21</sup> The risk of MCI conversion to dementia is associated with atrial fibrillation and low folate.<sup>22</sup> Continued follow up and monitoring of deterioration in the several ensuing years can capture the onset of definite dementing illness and initiation of specific treatment. The incipient stage also offers lead time in characterising possible non AD with advanced neuroimaging and anticipating the behavioural symptoms of the illness, "Mild Behavioral Impairment". MCI being the subclinical prodrome of an underlying severe neurodegenerative diseases, the risk factors for development of MCI and subsequent progression to dementia will necessarily be the same as that for the underlying dementing illness.

## Management of MCI

Cholinesterase inhibitors (CHEI) are established treatment agents for AD, DLB and vascular dementia (VaD). A double blind RCT examined the efficacy of donepezil, vitamin E and placebo in preventing

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conversion to disease. Donepezil lowered the conversion rate in the first 12 months, the rate of conversion at 3 years remained the same as placebo yielding conversion rate of 16% per year. Vitamin E had no effect as expected.<sup>23</sup> Understanding that MCIa represents the incipient stage of a dementing illness at which stage neuropathological burden has already accumulated to a substantial degree, only a disease modifying regime can have significant effect in reversing or stabilising the disease. CHEI in the treatment of mild and moderate AD has only a symptomatic stabilising effect. A meta-analysis of CHEIs in MCI concluded a modest positive treatment effect with a weighted reduction of risk of progression of 24%, but more than 40% of subjects remained stable during long term follow up; and 97/100 with MCI might have been unnecessarily treated. Moreover, adverse events were encountered in a high proportion of subjects.<sup>24</sup> Upregulation of choline acetyl transferase (ChAT) in the frontal cortex and hippocampus can be an important neurobiochemical mechanism in preventing the clinical transition of MCIa to AD, and too early application of CHEI may dampen down the compensatory pathway.<sup>25</sup> Hence, clinical and physiological data do not seem to recommend CHEI in MCI in the absence of reliable predictors of good response and the relatively small efficacy, but high adverse event rates.

However, the author sees some indications in specific treatment of MCIa in certain group of subjects; these include a rapid decline in cognition on close follow up, significant subjective impairment in a well educated person whose neuropsychological deficits and advanced imaging such as MRS or PET shows deficits compatible with AD pattern; in such a subject, the onset of cognitive decline already indicates significant neuropathological burden and advancement of treatment to the prodromal stage can be considered on an individual basis. Improvement in cognitive function may mean maintenance of independent living and quality of life in the early stage of disease. The real breakthrough in the treatment for MCIa will be disease modifying agents, yet to appear, which should theoretically be applied to the earliest stage of disease.

## Screening for MCI in the Community: NO; for Early Established Dementia: YES

Screening with simple clinical tools in the general community is not recommended. Such a population will necessarily include a large number of healthy persons with age related impairments. Advanced neuroimaging, detailed neuropsychological evaluation and close clinical follow up and medical treatment should be available to support the persons being identified. It should be noted that once a person is diagnosed with MCI in the clinical sense, legal competence is at stake in matters relating to financial decisions, driving and insurance. The validity of a will made at this stage may also be contested.

However, screening for early clinical dementia is recommended particularly to elder persons above 75years.<sup>26</sup> They should be comprehensively evaluated with blood tests and simple neuroimaging such as

CT brain. At the same time, the clinician should be aware of the incipient but not yet demented MCI stage when the patient is considered more "normal" than demented. Such patients should be monitored for further progression in the ensuing 1-2 years.

## Conclusion

Mild Cognitive Impairment is a clinical condition indicating the predementia stage in an affected person. Biomarkers such as advanced neuroimaging can enrich and improve the diagnostic accuracy in the subclinical stage. Diagnosis carries important ethical and legal implications. Screening for MCI in the non clinical sense in the general population is not recommended. However, screening for established early dementia in persons over 75years old is recommended in the clinical setting; and in the process, the clinician should be aware of the preclinical state of the dementing illness, when the person is still more "normal" than dementia. It is in this context that MCI becomes clinically relevant and further evaluation and close monitoring are provided. Specific drug treatment is considered on an individual basis and counselling is to be given. The question now is not what effective treatment is available; but how to accurately diagnose a preclinical disease and when to start specific treatment.

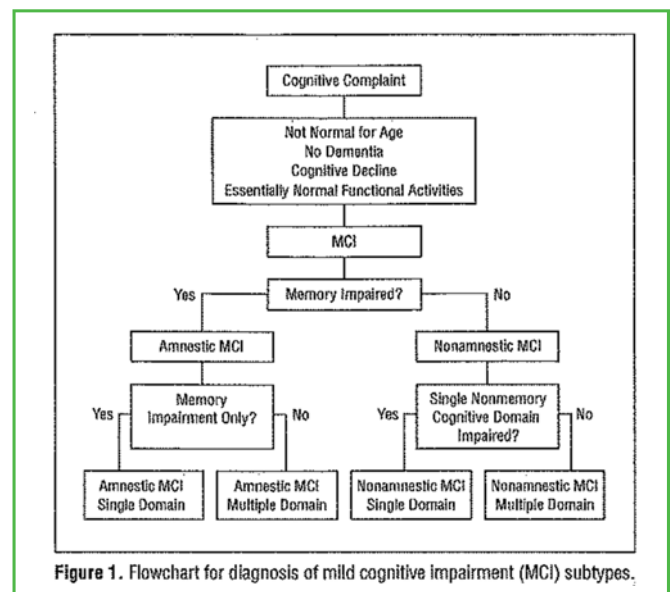


Figure 1. Flowchart for diagnosis of mild cognitive impairment (MCI) subtypes.

Clinical Classification		Etiology			
		Degenerative	Vascular	Psychiatric	Medical Conditions
Amnesic MCI	Single Domain	AD		Depr	
	Multiple Domain	AD	VaD	Depr	
Nonamnesic MCI	Single Domain	FTD			
	Multiple Domain	DLB	VaD		

Figure 2. Scheme for combining clinical subtypes with presumed etiology. AD indicates Alzheimer disease; Depr, depression; DLB, dementia with Lewy bodies; FTD, frontotemporal dementia; MCI, mild cognitive impairment; and VaD, vascular dementia.

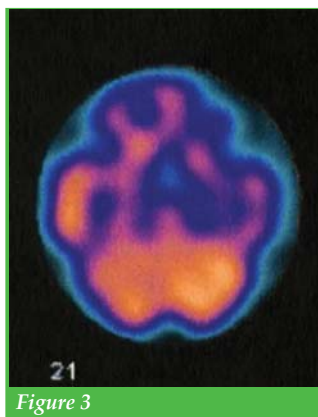


Figure 3




Figure 4

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# Clinical Management of Behavioural and Psychological Symptoms of Dementia

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Dr. Karen HY Wat

Behavioural and psychological symptoms of dementia (BPSD) occur at some point in over 90% of patients with dementia.<sup>1</sup> Behavioural symptoms are identified on the basis of observation of patients, and include physical aggression, screaming, restlessness, agitation, wandering, culturally inappropriate behaviours, and sexual disinhibition. Psychological symptoms are mainly assessed based on interviews with patients and relatives, and include anxiety, depression, hallucination and delusion.<sup>2</sup> No matter in what form do the BPSD appear, the first step is a careful search for the precipitants or stimulants of disruptive behaviours. Environmental triggers such as temperature, noise and bad smell, basic needs such as hunger or thirst, common medical problems such as pain and constipation, or social triggers such as change or loss of caregiver, are precipitating factors to be watched out for. The first approach to management of BPSD should therefore be environmental modification and behavioural interventions. When non-pharmacological interventions are found to be ineffective, drug therapy is often tried. A wide range of medications have been used, including anti-dementia drugs (cholinesterase inhibitors and NMDA receptor agonist), antipsychotics, antidepressants, anxiolytics and anticonvulsants/mood stabilisers (Table 1). The type of medications used usually depends on the likely antecedent of the behaviour, for example, antidepressants and anxiolytics if the patient is pacing around with increasing anxiety, or antipsychotics if the patient is responding to voices.

## Cholinesterase Inhibitors

Cholinesterase inhibitors are currently the drugs of choice for treating patients with mild-to-moderate Alzheimer's disease. Three types of cholinesterase inhibitors are available in Hong Kong.

### Donepezil

The drug with the greatest impact so far on the treatment of Alzheimer's disease has been donepezil. The starting dosage is 5mg nocte, increased to 10mg nocte after a month if necessary. Peripheral side-effects, which include diarrhoea, nausea, vomiting, insomnia, muscle cramps and anorexia, are generally of mild intensity and transient, resolving during continued donepezil treatment. Caution should be used in patients with asthma, renal disease, cardiac disease, epilepsy, and prior upper gastrointestinal bleeding.

There is now clear evidence emerging from clinical practice that the behavioural or non-cognitive symptoms of dementia are improved with donepezil treatment.<sup>3</sup>

Alzheimer's disease patients with more marked delusions, agitation, depression, anxiety, apathy, disinhibition and irritability are most likely to improve when treated with donepezil.<sup>4</sup>

### Rivastigmine

Rivastigmine has shown efficacy in treating behavioural disturbances in patients with a wide range of dementias, including Alzheimer's disease, vascular dementia, frontotemporal dementia, mixed dementia, Lewy body dementia, Parkinson's disease with dementia, and schizophrenia with dementia. The behaviour domains that most consistently showed improvement were apathy/indifference, anxiety, delusions and hallucinations.<sup>5</sup> There is also a substantial decrease in the use of antipsychotics for BPSD by patients taking rivastigmine, compared with patients not taking cholinesterase inhibitors.<sup>6</sup>

A large randomised controlled trial has compared the efficacy of donepezil and rivastigmine in moderate to moderately severe patients with Alzheimer's disease over a 2-year period. Both cholinesterase inhibitors had comparable effects on cognitive and behavioural measures, and rivastigmine was superior on measures of activities of daily living and global functioning.<sup>7</sup> A local study showed that rivastigmine significantly improved BPSD in Chinese patients with Alzheimer's disease, particularly in delusions, depression/dysphoria, disinhibition, irritability/lability, aberrant motor behaviour, and night-time behaviour disturbance.<sup>8</sup>

Rivastigmine was also shown to be useful in Lewy body dementia. Lewy body dementia is a common form of dementia in the elderly, characterised clinically by fluctuating cognitive impairment, visual hallucinations and parkinsonism. Patients with Lewy body dementia taking rivastigmine were significantly less apathetic and anxious, and had fewer delusions and hallucinations than controls.<sup>9</sup>

Because of its short half-life, rivastigmine has to be given twice daily. Titration should start at 1.5mg BD, increased to 3mg BD after a minimum of 2 weeks, aiming at an effective maintenance dose of 3mg BD to 6mg BD.

### Galantamine

In randomised, double-blind, placebo-controlled trials of up to 6 months' duration, galantamine consistently produced a broad spectrum of beneficial effects on cognitive and non-cognitive symptoms.<sup>10</sup> Patients' cognition, global function and abilities to perform activities of daily living were maintained, the emergence of behavioural symptoms was postponed and apparent

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- Benefits in PDD patients<sup>5</sup>

AD: Alzheimer's disease  
PDD: Parkinson's disease dementia

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reductions in caregiver burden were seen.<sup>11-14</sup>

In a recent randomised, double-blind, placebo-controlled trial, the effects of galantamine were investigated in patients with probable vascular dementia or Alzheimer's disease combined with cerebrovascular disease.<sup>15</sup> Galantamine showed greater efficacy than placebo in cognitive function, activities of daily living and behavioural symptoms in this group of patients.

Starting at 4mg BD, galantamine can be increased to 8mg BD after 4 weeks and then to 12mg BD after another 4 weeks if tolerable and having clinical benefit. Gastrointestinal side effects are infrequent and mild, and can be minimised using slow dose-escalation regimen.

## NMDA Receptor Antagonist

### Memantine

Memantine is approved for the treatment of moderate to severe Alzheimer's disease, and is the first anti-dementia drug to be available for this group of patients with advanced disease.

The recommended dosage of memantine is 10mg BD. Dosage reduction is needed in those with moderate renal impairment, and it is not recommended in patients with severe renal impairment. Caution should be exercised in patients with recent myocardial infarction, uncompensated congestive heart failure, uncontrolled hypertension or seizures. Adverse events were usually mild, including diarrhoea, insomnia, dizziness, headache, hallucinations, agitation and urinary incontinence.

Combining the data from two randomised controlled trials (RCTs) on the behavioural symptoms in Alzheimer's disease, memantine was found to be particularly effective in the agitation/aggression domain in the Neuropsychiatric Inventory.<sup>16</sup> Memantine can also be safely combined with cholinesterase inhibitors such as donepezil and rivastigmine as an add on therapy. Memantine has been shown to be superior in combination therapy with donepezil, in patients with moderate to severe Alzheimer's disease, when compared to using donepezil alone.<sup>17,18</sup>

## Antipsychotics

Delusions and hallucinations are very common in all stages of dementia, and they often respond well to low dose antipsychotics treatment. Conventional antipsychotics such as haloperidol, trifluoperazine, chlorpromazine and thioridazine have generally fallen out of favour for the treatment of BPSD, because of their side effects such as extrapyramidal symptoms, tardive dyskinesia, falls and orthostatic hypotension, anticholinergic and cardiac side effects. Currently there is a preference for newer antipsychotics such as risperidone, olanzapine, quetiapine and aripiprazole which are better tolerated by the elderly, although none of them has an approved indication for the treatment of BPSD. These atypical antipsychotics produce fewer extrapyramidal side effects, less tardive dyskinesia and fewer adverse cognitive effects, although they are more expensive than the conventional antipsychotics.

Atypical antipsychotics have been extensively studied in the treatment of BPSD. The effect size is only modest, with 20% better response rate than placebo in reducing agitation and psychosis.<sup>19</sup> RCTs showed that the atypical antipsychotics risperidone, olanzapine, quetiapine and aripiprazole are beneficial in terms of reduced neuropsychiatric symptoms,<sup>20</sup> and that risperidone and olanzapine significantly reduce aggression.<sup>21,22</sup> Another recent RCT showed that aripiprazole significantly improved psychotic symptoms and agitation in patients with Alzheimer's disease.<sup>23</sup> Preliminary studies showed that another atypical antipsychotic amisulpride is useful in controlling agitation, and is as effective and tolerable as risperidone in the treatment of BPSD.<sup>24,25</sup>

There are major controversies over the use of atypical antipsychotics for BPSD in the recent years. Data from four RCTs involving 1230 patients with dementia have raised concerns about the increased risk of cerebrovascular adverse events including stroke (two to three times), accelerated cognitive decline, and mortality (1.7-fold increase) with the use of atypical antipsychotics in patients with dementia.<sup>26</sup> Subsequently, regulatory authorities such as the European Drug Agency, Committee for the Safety of Medicine (CSM) in the UK and the FDA have issued advisory standings that all atypical antipsychotics should no longer be prescribed for the treatment of BPSD. However, further studies found a much smaller risk. For example, a systematic review of 15 RCTs, including a total of 3353 patients, suggested that only a small increase in risk of death was associated with the use of atypical antipsychotics as compared with placebo.<sup>27</sup> Subsequent studies found that the increased cerebrovascular risk is probably a class effect, with conventional antipsychotics also involved.<sup>28</sup> The latest evidence is provided by CATIE-AD, the first head-to-head, prospective, randomised, double-blind, placebo-controlled effectiveness trial of antipsychotic therapy in Alzheimer's disease. In this uniquely designed study with prescribing pattern similar to the real-world clinical situation, there were no observed differences in the rates of stroke or sudden death between the groups receiving atypical antipsychotics (olanzapine, quetiapine, risperidone) and placebo.<sup>29</sup>

Although caution is undoubtedly required with the use of these drugs, advising absolutely against them creates great difficulties for the management of patients with severe behavioural disorders, especially in the absence of better proven alternatives.<sup>30</sup> Clinical judgement and decisions based on individual medical needs and comorbidity, consideration of alternative treatments, and a thorough discussion of the potential benefits and risks with the patient and the relatives or caregivers are recommended.<sup>31</sup> The risk factors for cerebrovascular diseases, including previous history of stroke or transient ischaemic attack, hypertension, diabetes mellitus, smoking and atrial fibrillation, are to be considered before prescription. Treatment should be time limited and regularly reviewed every 3 months.

## Antidepressants

Making the diagnosis of depression in a demented elderly can be very difficult, because of their speech and comprehension disabilities. Careful monitoring of the

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  - Clinical significance has not been established
- Minimal potential for clinically relevant pharmacokinetic drug interactions<sup>2,3</sup>
- Easy to convert from REMINYL

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\* Wait at least 4 weeks to increase dosage.



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patient's facial expression, collateral information from the caregiver regarding tearful episodes, eating and sleeping patterns, can aid in the diagnosis. Irritable mood and somatic symptoms without biological explanations are also common presentations of depression in the demented elderly.

Selective Serotonin Reuptake Inhibitors (SSRIs) and other newer antidepressants are the first choice for reasons of tolerability. SSRIs such as fluoxetine, sertraline, paroxetine, citalopram and escitalopram, when compared with the older generation tricyclic antidepressants (TCAs), have the advantages of having less sedation, fewer anticholinergic effects, low cardiotoxicity, no postural hypotension, and safety in overdose. Side effects such as gastrointestinal upset and headache are generally dose-related and time-limited. Other useful newer antidepressants are venlafaxine (SNRI: Serotonin Noradrenaline Reuptake Inhibitors) and mirtazapine (NaSSA: Noradrenergic and Specific Serotonergic Antidepressant).

Depression may not persist for a long duration in demented patients, so it is reasonable to consider tapering the antidepressant after 6 months to 1 year after the clinical response is achieved and maintained.

## Anxiolytics

Anxiety is a symptom of depression, but it can also be induced by hallucinations and delusions. Anxiety in turn can lead to agitation and restlessness, repetitive vocalisation, insomnia, and resistive behaviour. Anxiety can be minimised by a gentle, calm approach by caregivers, by maintaining eye contact, and by explanation to the demented elderly of what is being done. Gentle distraction and involvement in activities are usually effective in reducing anxiety.<sup>32</sup>

Sedative-hypnotics are indicated for the acute treatment of anxiety syndrome, insomnia, non-specific agitation in the absence of psychosis and for time-limited sedation (for example before a bath or procedures), when behavioural and environmental management are not effective. Sedative-hypnotics (mostly benzodiazepines) are generally less efficacious than antipsychotics for BPSD, and initial improvement may be lost after prolonged use due to tolerance. Common side effects in the elderly are increasing confusion, paradoxical rage or agitation, daytime sedation, dizziness and falls, and benzodiazepine dependence syndrome. For these reasons, one should try to limit the use of anxiolytics to short term (4 to 8 weeks), and on a prn basis.

## Anticonvulsants / Mood Stabilisers

Use of anticonvulsants for agitation in dementia was originally advocated on the basis of extrapolation from reports that they reduced agitation, aggression, irritability and impulsivity across a wide range of other clinical disorders. For carbamazepine, there are only 2 RCTs for agitation in severely demented subjects.<sup>22</sup> Available data suggest that carbamazepine is safe and effective in treatment of agitation, at least in one of the trials and in the short term. However, rare toxicities such

as hepatitis, blood dyscrasias and the fatal Stevens-Johnson syndrome may limit its prescription in the elderly. For sodium valproate, only 3 RCTs are available, showing no difference in treatment of depression and anxiety symptoms when compared to placebo group.<sup>22</sup> When prescribing anticonvulsants, regular blood level monitoring of anticonvulsants should be scheduled. When used for treating agitation, these drugs may be effective in blood concentrations lower than those required for control of seizures.

## Conclusion

Pharmacological interventions can complement non-pharmacological interventions in the treatment of BPSD. Because of their beneficial effects on cognitive and behavioural symptoms and in functional improvement, cholinesterase inhibitors are now commonly prescribed for patients with mild-to-moderate Alzheimer's disease. For pharmacological treatment of BPSD, a realistic goal is a reduction in the frequency or severity of the symptoms rather than a complete remission. Most behavioural problems are only present through a portion of the natural history of the dementia, so it is important to reassess and stop unnecessary medications such as antipsychotics and anxiolytics at a later stage. Dosing should be kept to one to two times per day as the memory function of the demented patient is impaired. The golden rule of prescribing in the elderly "start low and go slow" must also be remembered.

*Table 1: Selected drugs used for treatment of behavioral and psychological symptoms of dementia*

Drug	Usual Daily dose	Frequency
<b>Antidementia</b>		
Donepezil	5 - 10 mg	N
Rivastigmine	3 - 12 mg	BD
Galantamine	8 - 24 mg	BD
Memantine	5 - 20 mg	BD
<b>Antipsychotics</b>		
Haloperidol	0.5 - 2 mg	QD to BD
Risperidone	0.5 - 2 mg	QD to BD
Olanzapine	2.5 - 10 mg	QD to BD
Quetiapine	50 - 100 mg	QD to BD
Aripiprazole	10 - 15 mg	QD
Amisulpride	50 - 200 mg	QD to BD
<b>Antidepressants</b>		
Sertraline	25 - 100 mg	QD
Paroxetine	10 - 40 mg	QD
Citalopram	10 - 40 mg	QD
Velafaxine XR	75 - 225 mg	QD
Mirtazapine	15 - 45 mg	N
<b>Anxiolytics</b>		
Lorazepam	0.5 - 2 mg	N to BD
Alprazolam	0.25 - 1.5 mg	N to tds
Clonazepam	0.25 - 1 mg	N
<b>Anticonvulsants/mood stabilisers</b>		
Carbamazepine	400 - 600 mg	BD
Sodium valproate	400 - 600 mg	BD



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Answer to Cincial Quiz

Radiological findings:

Non-contrast CT Brain:

No abnormal cortical lesion seen. Ventricles are not dilated.

Bony defect is seen at Lt occipital region along the Lt lambdoid suture. No adjacent soft tissue swelling or mass lesion seen. The bony margin is well-corticated. No periosteal reaction seen.

Diagnosis:

Lt lambdoid defect in Neurofibromatosis

Discussion:

Neurofibromatosis is autosomal dominant but 50 are spontaneous mutations. The involvement in skull and brain are:

1. Hemihypertrophy or hemiatrophy of the cranium. Macrocranium.
2. Dysplastic sphenoid - with absent greater wing +/- lesser wing (empty orbit), absent posterolateral wall of the orbit. May produce proptosis.
3. Lytic defects in the calvarium, especially in or near the lambdoid suture.
4. Optic nerve gliomas (common). Optic nerve sheath meningiomas (rare).
5. Neuromas, especially acoustic neuromas, If bilateral they are virtually pathognomonic of the condition.
6. Meningiomas.
7. Heavy calcification of the choroids plexuses is rare but classical.

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# Management of Common Respiratory Infections in Residential Homes

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Dr. Yee-ming Wu

Infectious diseases are common among residential care home residents. In a point prevalence study done by the Surveillance and Epidemiology branch of the Centre for Health Protection that surveyed 43 Residential Care Homes for the Elderly (RCHE) by systematic stratified cluster sampling, a total of 1626 residents were interviewed by trained health care workers to determine the prevalence of commonly occurring infections in RCHEs and to identify their associated risk factors. The estimated overall prevalence of residents with infection was 5.8% (95/1626). Upper respiratory tract infection (URTI) was the most common infection among the residents (2.1%), followed by skin & soft tissue infection (1.4%), urinary tract infection (0.6%), lower respiratory tract infection (0.5%), conjunctivitis, influenza like illness (0.25%), tuberculosis (0.25%), gastroenteritis and scabies.<sup>1</sup>

Infection accounts for substantial morbidity and mortality in elders dwelling in residential homes. Respiratory infections are particularly important in terms of the high incidence and the potential of serious consequences. Age related changes in the local respiratory tract defence mechanism and in the systemic immune response, effects of comorbidities, immobility, malnutrition and iatrogenic factors all interact to increase the elder's susceptibility to infections.<sup>2-4</sup>

The spectrum of common respiratory infections in residential home elders spans from viral upper respiratory tract infections, to community acquired pneumonia, nursing home acquired pneumonia and pulmonary tuberculosis.

## Upper Respiratory Tract Infections

The clinical presentation of viral upper respiratory tract infections varies. The onset is sudden. Systemic symptoms may include fever, chills, myalgia, malaise, headache, and then followed by local respiratory symptoms of runny nose, sore throat and cough. Occasionally the presentation can be atypical, such as falls, delirium and decline in functional status. Cases can occur sporadically or in outbreaks. Close person-to-person contact, crowded communal living and the lack of infection control measures contribute to the increased risk of contracting viral respiratory diseases. The disease is usually self-limiting but it can lead to viral pneumonia, secondary bacterial pneumonia or even death.

The more common causative agents include influenza A and B, respiratory syncytial virus, parainfluenza virus

and adenovirus. Diagnosis can be made by rapid antigen testing or viral culture of nasopharyngeal aspirate or swab. The best strategy to decrease the incidence of influenza and its associated morbidity and mortality is vaccination.<sup>5</sup> Currently trivalent influenza vaccination recommended by the World Health Organisation is offered to elders in residential care homes by the Department of Health at around November each year. Influenza vaccination has been proven to reduce hospitalisations for acute and chronic respiratory illness by one third, hospitalisations for pneumonia and influenza by 39%, hospitalisations for congestive heart failure by 27% and death from all causes by 50%.<sup>6</sup>

Treatment for viral upper respiratory tract infection is supportive. Attention should be paid to relieving fever, myalgia and headache using paracetamol, and to the avoidance of dehydration. Antibiotics should not be given unless there is supervening bacterial infection. Anti-viral agents for influenza such as oseltamivir 75mg bd for 5 days, when given within 48 hours of symptom onset, can reduce the severity and duration of the illness. Anti-viral prophylaxis, oseltamivir 75mg daily for the duration of the influenza outbreak, can also be given to other inmates and health care workers who have come into contact with the index case.

## Pneumonia

Pneumonia is a leading cause of morbidity and mortality among residents in long term care facilities.<sup>7</sup> Residents are at higher risk of developing pneumonia than community dwelling counterparts.<sup>8</sup> Risk factors include functional dependency, chronic pulmonary disease, tracheostomy, difficulty with oral secretions, tube feeding and conditions causing aspiration.<sup>3</sup>

Clinical presentation of any diseases may be atypical in the elderly, pneumonia included.<sup>9</sup> Older adults tend to have fewer symptoms than do younger adults. Only two thirds of nursing home patients with pneumonia will have a temperature greater than 38 degree C at presentation. Cough and dyspnoea may be absent. On the other hand patients with pneumonia may present with alteration in mental state, falls, incontinence, failure to thrive and heart failure.

Streptococcus pneumoniae remains the most commonly identified causative agent, followed by Haemophilus influenzae, Moraxella catarrhalis, Klebsiella spp, Pseudomonas aeruginosa, Enterobacteriaceae, and Staphylococcus aureus. Atypical pneumonia is less common. Legionella pneumonia, while frequently



encountered and reported in Western countries, is uncommon in Hong Kong.<sup>10</sup> The importance of *Chlamydia pneumoniae* and *Mycoplasma pneumoniae* is as yet to be determined. Influenza virus, parainfluenza virus and respiratory syncytial virus are the most common aetiology for viral pneumonia. Drug resistant bacteria are increasingly encountered in nursing home acquired pneumonia. Reduced susceptibility of *Streptococcus pneumoniae* to penicillin and resistance to macrolides are high. Methicillin resistant *Staphylococcus aureus* (MRSA) is an increasingly recognised pathogen in nursing home population, especially among those with recent hospitalisation and prior use of antibiotics.

A minimal diagnostic evaluation for suspected pneumonia in a nursing home patient should include recording of temperature, respiratory rate, heart rate, assessment by a physician, sputum culture, and chest radiograph.<sup>11</sup> The precise aetiological diagnosis may be difficult in this group of patient. A satisfactory sputum sample is not easy to obtain. In addition it may not be possible to distinguish colonisation from genuine infection.

Pneumonia prevention should adopt a multi-faceted approach.<sup>12</sup> Influenza vaccination is recommended in people over the age of 65 years, those with respiratory conditions and residents of nursing homes. Pneumococcal vaccination is more controversial and is not generally administered unless the patient has chronic pulmonary disease, has prior history of pneumococcal infections or has conditions that increase the susceptibility and severity of pneumococcal infections. Measures to prevent nursing home acquired pneumonia include (1) minimisation of aspiration and colonisation of the oropharynx (2) cautious use of sedative-hypnotic medications (3) optimisation of nutritional status (4) optimisation of oral hygiene and dental care.<sup>12</sup>

The first decision to make in the treatment of pneumonia in residents of care homes is whether to send the patient to the hospital or to treat the patient in the aged home. This would depend on the severity of the respiratory illness and the availability of resources in the residential home. Mild cases can be managed in the residential homes if medical and nursing supports and basic investigations are readily accessible. Initial empirical antibiotic therapy should be a beta-lactam / beta-lactamase inhibitor combination e.g. amoxicillin and clavulanic acid, or ampicillin and sulbactam. Another alternative is an oral second generation cephalosporin. Fluoroquinolones is not recommended as a first line agent to treat community acquired pneumonia by the local IMPACT guideline because of the risk of emergence of resistance among *Streptococcus pneumoniae*.<sup>13</sup> The presence of risk factors may prompt the physician to modify the initial empirical antimicrobial therapy to cover Gram negative micro-organisms. These factors include age over 65 years, beta-lactam therapy within the past 3 months, alcoholism, multiple medical comorbidities, impaired functional status, history of Gram negatives chest infections and history of Pseudomonal respiratory infections. Macrolide monotherapy is not recommended because of high cross resistant among penicillin resistant *Streptococcus pneumoniae*. However macrolide is invaluable in the treatment of *Legionella pneumoniae* and therefore should be given if atypical pneumonia is suspected.

Factors that are identified to associate with failure of treatment of pneumonia in the nursing home are (1) pulse rate > 90/min (2) temperature > 100.5 deg F (consider to use degree C) (3) respiratory rate > 30/min (4) Feeding tube dependence and (5) mechanically altered diets.<sup>14</sup> Physicians should be alerted to transfer the patient to an acute care facility.

Elders hospitalised for pneumonia are commonly prescribed intravenous beta-lactam / beta-lactamase inhibitors. With more severe pneumonia or patients with risk factors for Gram negative infections, more broad-spectrum antibiotics should be considered e.g. ceftriazone. *Pseudomonas aeruginosa* is an important hospital acquired micro-organism as well as in patients with bronchiectasis. Antibiotics with anti-pseudomonal activity should be chosen e.g. ceftazidime, piperacillin / tazobactam, ciprofloxacin, cefepime, imipenem. Once the pathogen is identified the anti-microbial treatment should be narrowed down to cover the specific micro-organism. Vancomycin should be instituted if MRSA is isolated from an adequate sputum specimen. Supportive care is another important element in the total management of pneumonia in frail elders. The goal is to prevent complications such as dehydration, pressure sores, delirium and deep vein thrombosis. Respiratory failure should be recognised early and appropriate support given without undue delay e.g. oxygen therapy, non-invasive positive pressure ventilation, or even intensive care with intubation and mechanical ventilation. Ethical considerations arising from life-sustaining treatment in chronically debilitated elders living in nursing homes is a constant issue for debate in aged care medicine, which is beyond the scope of the present article.

## Aspiration Pneumonia

Aspiration pneumonia in its narrow sense refers to a more indolent type of chest infection caused by chronic aspiration of oral secretion, particulate or liquid food substances, or gastric regurgitation contents into the lower airways.<sup>15</sup> A predisposing condition for aspiration such as old stroke or dementia is often evident in the history. Aspiration pneumonia is also associated with poor oral and dental hygiene. The presenting findings in aspiration pneumonia due to bacterial infection are highly variable depending upon the bacteria involved and the status of the host. Most cases involve anaerobic bacteria that normally reside in the gingival crevices. Fever may not be present and is usually of low grade. Rigour is often absent. Sputum may be purulent and putrid to reflect anaerobic infection. Many patients with aspiration pneumonia do not present with the acute infection but later with complications characterised by suppuration and necrosis e.g. lung abscess and empyema. Treatment of aspiration pneumonia involves antibiotic therapy against anaerobic micro-organisms. Clindamycin, amoxicillin-clavulanate or metronidazole can be used. Micro-organisms other than anaerobes may also be responsible for aspiration pneumonia when these microbes (e.g. Gram negative bacilli, MRSA) colonise the secretion from the oropharynx as a result of prior antibiotic use, chronic illnesses and hospitalisation.



### Aspiration Pneumonitis

Aspiration pneumonitis is defined as acute lung injury after the inhalation of regurgitated sterile gastric contents. It usually occurs within 4 to 6 hours after an aspiration event. Symptoms are similar to pneumonia, making it difficult to distinguish the two conditions.<sup>15</sup> Treatment is mainly supportive for uncomplicated chemical pneumonitis. Antimicrobial therapy is indicated for aspiration pneumonitis that fails to resolve within 48 hours after aspiration.

### Tuberculosis

Tuberculosis is still endemic in Hong Kong. The tuberculosis notification rate for the 85 years plus age group is 8 folds that of the 30-34 years age group. The reasons for this are: poverty, socioeconomic disadvantage, decline in immune functions due to ageing and comorbid diseases.<sup>16</sup> Older persons tend to present late and with atypical features such as lower lobe involvement.<sup>17</sup> A high index of suspicion is required for the diagnosis of tuberculosis in inmates of care homes. Chest radiograph and sputum acid-fast bacilli smear and culture remain the mainstay diagnostic investigations. Anti-TB chemotherapy regime in this group of patients often needs modifications. In the elderly tolerability to anti-TB drugs is poor. Adverse effects are more common and more severe. Hence the number of drugs contained in the regime may be reduced and the dosage decreased. As a consequence of the drug regime alteration, along with other factors like co-existing diseases, prior TB treatment history, prolongation of duration of therapy may be required.

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Treatment Time	Performance of TUG Test		
	Not Capable	> 10 sec (not successful)	< 10 sec (successful)
Baseline	22.8	51.6	25.6
3 months	22.1	38.8	39.1
6 months	21.5	32.9	45.7

## Conclusions:

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Reference:  
Dukas L, Schacht E.  
Osteoporosis Int. 2008, Vol 19: s127 (p302)

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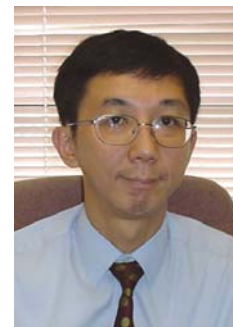


## Update on Treatment of Osteoporosis

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*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 September 2008.*

Biphosphonate was the first class of drugs shown to be effective in preventing non-vertebral fractures. They have been in the market for over ten years in Hong Kong. In recent years, several other classes of drugs have been introduced. Yet the age adjusted incidence of osteoporotic hip fractures in older people has not declined<sup>1</sup>. This is in part due to the low usage of osteoporosis therapy. Barriers included the availability and costs of bone mineral density measurement (BMD) by Dual energy X ray Absorptiometry (DEXA) scan, the costs of osteoporosis medications, and the lack of awareness among attending doctors.

An important limitation of osteoporosis therapy has been drug non-compliance. Biphosphonates need to be taken with an empty stomach and in the upright posture, in order to prevent poor absorption and oesophagitis respectively. Compliance can be significantly improved with less frequent dosing regimes. Alendronate can be taken once weekly and has shown to be as effective as the once daily regime in increasing bone mineral density. This appears to be a class phenomenon and can be explained by their high affinity to bone and their apoptotic effects on osteoclasts. More recently, ibandronate has shown to be effective even when given once a month orally or once in three months if given intravenously. A very potent form of biphosphonate - Zoledronate can be given by a half hour infusion once a year, and this has been shown to be effective in improving BMD and preventing fractures in a randomised placebo trial. The infrequent dosing offers a distinct advantage in the older osteoporosis patients who already suffer from polypharmacy.

There have been concerns on the long term safety of biphosphonate therapy, because of its potent inhibition of osteoclastic activity. In particular, there have been rare reported cases of irreversible osteonecrosis of jaw which is devastating to patients. Orthopaedic surgeons have also reported cases of unusual fractures e.g. mid femoral fractures in those on long term treatment of biphosphonates. The significance and explanation of these case reports need further evaluations. On the other hand, the extension trial of the original FITS trial showed that alendronate therapy for ten years continued to show benefits in BMD and fracture rates<sup>2</sup>.

In middle-aged postmenopausal women who have low absolute risks of non-vertebral fractures, selective oestrogen receptor modulators (SERM) may be a good alternative treatment. They are effective in increasing BMD and have been shown to prevent vertebral fractures. More importantly, they have protective effects against breast cancer, though risks of venous thrombosis and fatal stroke are increased<sup>3</sup>. Hormonal replacement is no longer recommended as a treatment or prevention of osteoporosis in menopausal women because of the increase in relative risk of breast cancer. They may be prescribed if the women are willing to take the risk and undergo yearly mammogram.

Both biphosphonates and SERM work by inhibiting osteoclastic (bone resorptive) activities which are in relative excess of osteoblastic (bone building) activities. But the age related decline in osteoblastic activities is also a major factor of age related osteoporosis. Parathyroid hormone (PTH) has been well known to increase bone turnover, and persistent hyperparathyroidism has been associated with osteoporosis. However, intermittent PTH stimulates osteoblasts without significantly affecting the osteoclasts. This major finding led to the development of intermittent PTH therapy which has been shown to be very effective in increasing BMD and preventing osteoporotic fractures, particularly at the spine. Up to one fifth of patients may develop mild hypercalcaemia in the first six months, which usually resolves with dose reduction<sup>4</sup>. Unfortunately, the high drug costs and the need to be given as once daily subcutaneous injections have meant that the indication for PTH is limited to those with severe osteoporosis (T score less than -4.0) and with high fracture risk. It is not recommended to continue with the treatment for more than eighteen months because of the concern over the risk of osteosarcoma.

Strontium is an interesting trace element which stimulates osteoblasts and inhibits osteoclasts at the same time. It has been shown to reduce the incidence of vertebral and non-vertebral fractures in older people. It offers a good alternative to biphosphonates particularly in those who have gastrointestinal side effects from biphosphonates, and its powder preparation also facilitates its use in frail elders who cannot swallow tablets.



Older people often have low calcium intake and have subnormal vitamin D status because of low level of outdoor activities and renal impairment. Any drug treatment of osteoporosis should be accompanied by calcium and vitamin D supplements. These supplements on their own can be expected to offer some protection against fractures in those with sub-optimal vitamin D and calcium status. Although Hong Kong is in the subtropical region, a local study showed vitamin D deficiency is also prevalent in older people<sup>5</sup>.

To encourage more treatment of osteoporosis in people who are most likely to suffer from fractures, the WHO is advocating the use of absolute fracture risk when clinicians decide on drug treatment for osteoporosis. This was facilitated by a simple scoring system based on established risk factors of fractures. The instrument is currently accessible at the internet ([www.shef.ac.uk/FRAX](http://www.shef.ac.uk/FRAX)). DEXA is not an essential variable in the scoring system, but it is recommended for those who have access to it. Firstly DEXA adds to the predictive power. Secondly follow-up DEXA reassures clinicians and patients that the drug treatment is working. There is evidence that DEXA scan improves drug compliance.

High absolute fracture risk does not necessarily mean that osteoporosis therapy is indicated. That is because most fractures in older people occur in those with osteopenia, and there is no evidence so far that osteoporosis therapy is effective in preventing non-vertebral fractures in high fracture risk populations without selection for osteoporosis. However fracture risk estimation may prompt clinicians to screen for osteoporosis by DEXA, fracture history or simple algorithm. Among Asian women, a simple formula based on age and weight has been validated. If body weight (kg) minus age (years) and then multiplied by 0.2 is smaller than -1, there is an increased risk of osteoporosis in Asian women<sup>6</sup>.

Older men are also at risk of osteoporosis and fractures. The risk factors are similar to those of women<sup>7</sup>. But androgen deficiency is an additional consideration.

Osteoporosis screening by DEXA, followed by osteoporosis treatment, has been shown to be cost effective in men aged 65 years or over and with fracture history, and in men aged 80-85 years<sup>8</sup>.

In summary, there is wide range of effective drug treatments for osteoporosis. Clinicians should be alert to their patients' fracture risk, and actively screen for osteoporosis particularly in those with high fracture risk. The choice of treatment will depend on the age, sex, comorbidities and individual tolerance to drugs. A more proactive approach is required to make a significant impact on the fracture rates of the older population.

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## MCHK CME Programme Self-assessment Questions

Please read the article entitled "Update on Treatment of Osteoporosis" by Prof. Timothy Kwok, 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 September 2008. 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. Medical treatment for osteoporosis has significantly reduced the incidence of hip fractures in Hong Kong.
2. Osteoporotic fractures can be predicted by clinical indicators alone.
3. DEXA is not essential to the diagnosis of osteoporosis.
4. Most commonly used drugs for osteoporosis work by slowing bone resorption.
5. Biphosphonates should not be taken for more than five years.
6. Hormonal replacement is the treatment of choice in middle aged post-menopausal women.
7. Vitamin D supplementation is not indicated in osteoporosis patients in Hong Kong because of the abundance of sunshine.
8. Parathyroid hormone therapy promotes osteoblastic activities.
9. Osteoporosis medications are indicated in all older patients with high fracture risks.
10. Osteoporosis screening and treatment are not cost effective in men, because of the low incidence of fractures.





## ANSWER SHEET FOR SEPTEMBER 2008

Please return the completed answer sheet to the Federation Secretariat on or before 30 September 2008 for documentation. 1 CME point will be awarded for answering the MCHK CME programme (for non-specialists) self-assessment questions.

### Update on Treatment of Osteoporosis

#### Prof. Timothy Kwok

MB.ChB, MD, FHKAM (Medicine)

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

1  2  3  4  5  6  7  8  9  10

Name (block letters): \_\_\_\_\_ HKMA No.: \_\_\_\_\_

HKID No.: \_\_\_\_\_ - \_\_\_\_\_ X X (x) DUHK No.: \_\_\_\_\_

Contact TelNo.: \_\_\_\_\_ CDSHK No.: \_\_\_\_\_

### Answers to August 2008 issue

#### Epigenetic Therapy Comes of Age:

#### Waking Up Silenced Tumour Suppressor Genes in Myelodysplastic Syndrome

1. **T** 2. **T** 3. **F** 4. **F** 5. **T** 6. **T** 7. **T** 8. **T** 9. **T** 10. **T**



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# Health Care Professionals in the Ageing Era

**Dr. Edward MF Leung**

FHKAM (Medicine), FHKCP, FRCP (Edin, Lond, Glas)  
Consultant Geriatrician, United Christian Hospital,  
President, Hong Kong Association of Gerontology

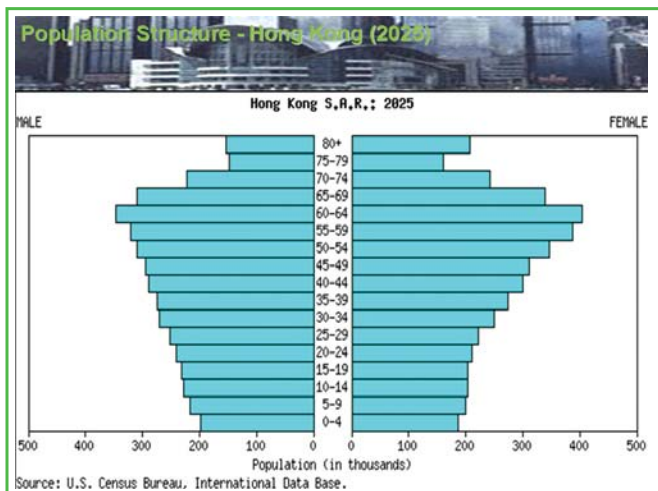
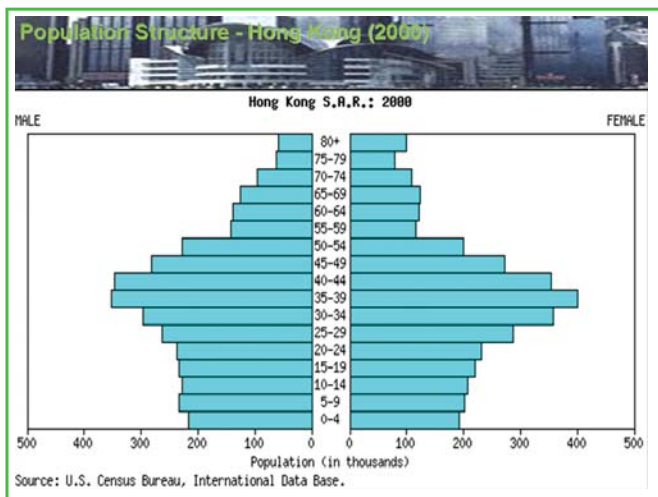


Dr. Edward MF Leung

By the year 2033 one in every four persons in Hong Kong will be over the age of 65. This population change is due to the World Renowned Phenomenon of ageing of the post war baby boomers born in the 1950s to 1970s. I suppose many of the readers may be part of this group by the year 2033. This phenomenon of ageing population has been coined as a major reason for the recent Health Care Financing Reform Proposal from the government. As the population ageing will affect every person in Hong Kong, the medical and health care profession will not be an exception. There will be both positive and negative impact on individuals and professional groups. How we prepare ourselves and our profession will significantly affect the future well being of individuals and health care professionals. In this article, I will highlight the importance of preparation for population ageing in terms of the development in the health care professionals and the preparation for retirement for individuals.

## Challenges and Opportunities for Health Care Professionals

During the late 1990s and early 2000s medical and health care professionals have faced unstable job security and insecure professional development. We have witnessed salary reduction, unstable contract employment and reduction of intake in terms of students in health care including medical schools, nursing schools, allied health professionals giving us a gloomy outlook of the professional development in the previous years. However, with the rapid population ageing from 13% over the age of 65 in 2003 to 25% in 2033 would mean a lot of changes from the present day scenario. The changing disease pattern of chronic and degenerative conditions like Alzheimer's disease, Stroke, Parkinsonism, Hypertension, Coronary heart disease, prostatic disease, cataracts, osteoporosis etc will place increasing demands on various aspects of demand for health care including medical care, nursing and rehabilitation. The manpower requirement for medical, nursing and rehabilitation professionals will be increasing tremendously in the coming 15 years' time. At present, we have already witnessed huge shortfall in nursing manpower in public hospitals, private hospitals and old age homes. Coupled with the retirement of a large number of medical and nursing professionals in the next 15 years, the shortfall in medical and nursing manpower will continue to grow. We will need a proper manpower planning to fill the demands for the health care professionals in Hong Kong and therefore there will be huge development potential for health care practitioners in Hong Kong. In the next 15 years we will be witnessing the ageing of a large number of well off middle class professionals and businessmen and the socio-economic distribution of older people in the coming 15 years will be much different from the present day cohort and the demand of higher quality health care services will open up a lucrative private health care market to cater for the need of this group of middle class older people. To better prepare the health care professionals for tackling the ageing population, there should be increase in undergraduate training of all health care professionals for the curriculum of geriatrics and gerontology. There will be a need to provide in-service training to all health care professionals in the practice of geriatrics and gerontology so that they will be more able to care for older patients in their respective specialty. Appropriate re-orientation should also be provided in health care facilities to cater for the need of older people including elder friendly hospital environment, community care facilities, hospital avoidance, rehabilitation and long term care facilities.





**Table 1 Prevalence of chronic illnesses amongst older people in Hong Kong**

Illness	Number	Percentage
Rheumatism	504	34.2
Hypertension	474	32.2
Fracture	205	17.1
Peptic ulcer	198	13.5
Diabetes mellitus	153	10.7
Chronic bronchitis	120	8.2
Coronary heart disease	100	6.8
Hyperthyroidism	89	6.1
Urinary incontinence	72	4.9
Stroke	55	3.8
Faecal incontinence	43	2.9
Hyperparathyroidism	21	1.4

(Leung and Lo 1997)

**Table 2 Distribution of chronic diseases by Age and Sex, 1996**

Diagnosis	18-39		40-64		> 65	
	M	F	M	F	M	F
Back Pain	0.4	1.4	9.5	13.0	24.9	34.5
Hypertension	0.4	0.6	7.2	12.4	17.8	26.9
Rheumatism	1.3	2.2	6.9	7.8	7.5	14.1
Diabetes	0	0.2	2.2	4.9	6.1	12.0
Skin Problem	0.8	1.2	1.9	1.5	2.8	2.4
Peptic Ulcer	1.1	0.7	2.0	1.6	1.9	0.8
Asthma	0.7	0.4	0.5	1.3	4.2	0.8
Chronic Bronchitis	0.2	0.7	0.3	1.8	3.8	2.4
Heart Disease	0.1	0.1	0.8	1.8	3.8	5.6
Cataract	0	0	0.3	1.0	3.8	1.6
Stroke	0	0	0.3	0	3.8	1.6
Deafness	0	0	0.2	0.3	3.3	1.6

(Leung and Lau 1996)

## Retirement and Active Ageing

There will be a high number of baby-boomer health care professionals to retire within the next 15 years. How we are able to prepare ourselves for the post-retirement period is an important issue for the health care professionals. There will be a number of issues facing the medical professionals, namely continual employment, financial security after retirement, recreational activities, preservation of quality of living, arrangement for asset transfer and preparation for old age phenomenon including health care and long term care arrangement.

For the medical professions, the mode of employment has changed dramatically in the past 20 years. Many doctors are employed by the public sectors and continue their employment until the retirement age of 60. However, experience from other countries have demonstrated that most medical professionals will continue to work in their sixties. However, the change from a long term employed position to an independent practice at an age of 60 will pose many difficulties in comparison to those entering private practice at younger age. Therefore continuing employment of the retiring medical professionals will be a major issue in the years to come. A continuing working life not only contributes to the financial well-being but also a healthy psycho-social well-being. Those who will be retiring from an employed position from the public sector should consider to take up part-time employment or to share medical practice. Apart from taking up full time private practice or a part-time position in the same profession, one could consider switching to volunteering. We have seen many successful examples of medical professionals in

contributing to various charitable and social services after their retirement. At present, there is no true age that one needs to retire from their work, we have seen cases in United States and Canada that people could continue to work even in their seventies. In fact, in Hong Kong, many of our private medical practitioners work beyond the age of seventies. However, many of them do not work as much as in their younger days. To the community, medical professionals working beyond the public sector retiring age will help in future to cope with the shortfall of medical manpower in the rapid ageing situation. Public sector and private medical practices should consider actively offering part-time employment to retiring medical professionals.

Financial security is another major issue after retirement. With a life expectancy of 80 in men and 86 in women, one will need to be living on their savings or assets for at least 20 years after their retirement. With the advancement of medical care some could even live for a period of 40 years beyond retirement. For most medical professionals it may not seem to be an imminent issue compared with other employed workers. However, after stopping gainful employment or medical practice, the issue of how their financial condition to remain healthy should not be neglected. A continuing income from their assets will be important in continuing of one's own life style similar to pre-retirement stage. One should plan ahead at least 10 years prior to their retirement on how their future retirement funding would be spent in the 20+ retirement years. A proper financial planning with continuing returns on the remaining assets is important to sustain the estimated long life span. The continuing growth in the assets and financial returns will contribute to the retiree in maintaining their quality of living till old age.

As we continue to live into an older age like beyond age of 75 the issues of health, medical care, personal care are real issues to consider. Present day knowledge demonstrates that chronic and degenerative conditions are much more common in those over age of 75 and these also contribute to their increased use in medical care like medical consultation and hospitalization. The related health care cost will likely to be much higher than during a younger age. It is important to establish a proper healthy life style at a younger age so that cardiovascular diseases common in old age could be avoided. Apart from a healthier life style, one needs to plan ahead for ensuring adequate funding to support a high quality medical care in facilities one wishes to choose. Therefore, the proper medical insurance scheme that could guarantee continuing medical coverage for expensive medical bills up to the age of 100 years should be considered.

Experience from Hong Kong and other western countries has shown that for the majority of people living into old age, most of them will require personal and nursing care in their final 2 years of life in the form of long term care. The large number of old age homes in Hong Kong reflects the situation well. A proper planning towards long term care finances should be an important aspect to consider for all retirees. Setting aside a sum of money which could pay towards at least 24 months of high quality long term care (residential care homes) should guarantee a dignified life in the very last days of life and one could choose high quality residential care services one would like without causing a burden to their children.



Most health care professionals possess a higher asset than the general population. A proper arrangement of their finances and assets before any major illness is an important aspect for consideration. In old age any form of major diseases affecting the mental capacity like acute stroke or dementia could happen suddenly or insidiously affecting the individual's capacity in decision making. The present arrangement of Guardianship order enables their immediate family member to be legal guardian of the mental incapacitated person. However, there is a limit to the fund that the legal guardian could make use of each month. At the present moment, the monthly sum that could be utilized stands at around HK\$10,000 which is significantly less than most medical professionals' monthly expenses. So for someone with a sizeable asset some sort of legal arrangement like Enduring Power of Attorney, advanced directive or establishing a Trust Fund with trustees could better serve the appropriate use of funds when someone lacks the mental capacity after a major illness.

### Conclusion

Population ageing has often been discussed as a problem in the society. Ageing will become a problem to individuals and the society if we do not plan for it properly. For the society, a proper planning in terms of retirement protection and health care financing will contribute to the advancement of the society rather than pose a threat to the society. For individuals, it is certainly most important to have a plan for how he/she would be living into old age through proper arrangement of employment, retirement, recreation, leisure, financial arrangement and health care. Successful retirement would mean another new life experience in old age. Ageing may be a threat but it also brings plenty of opportunities for health care professionals.



### Society News

#### News from Member Societies:

##### The Guild of St. Luke

Updated office-bearers for the year 2008-2009 are as follows: Master: Dr. Michael POON; Honorary Secretary: Dr. Stella Pui-yan WONG; Honorary Treasurer: Dr. Francis CHU

##### The Society of Anaesthetists of Hong Kong

Updated office-bearers for the year 2008-2009 are as follows: President: Dr. Steven WONG; Vice-President: Dr. S. K. NG; Honorary Secretary: Dr. Song-tuen TAN; Honorary Treasurer: Dr. Chi-wai CHEUNG

The FMSHK would like to send its congratulations to the new office-bearers and look forward to working together with their societies.



### Calendar of Events

#### Meetings

17/10/2008 7:00 pm - 10:30 pm	<b>Hong Kong Museum of Medical Sciences Fund-raising Dinner 2008</b> Organised by: Hong Kong Museum of Medical Sciences Society Chairman: Dr. Laurence L.T. HOU # The Hong Kong Academy of Medicine, Run Run Shaw Hall, 99 Wong Chuk Hang Road, Hong Kong Enquiry: Ms. Tracy NGAI / Mr. Ringo NG Tel: 2549 5123 Fax: 2559 9458
1-2/11/2008	<b>16th Annual Scientific Meeting of Hong Kong College of Radiologists</b> Organised by: Hong Kong College of Radiologists # Hong Kong Academy of Medicine Jockey Club Building, 99 Wong Chuk Hang Road, Aberdeen, Hong Kong Enquiry: Secretariat Tel: 2871 8788 Fax: 2554 0739 Email: enquiries@hkcr.org Website: <a href="http://www.hkcr.org">http://www.hkcr.org</a>
22-25/11/2008	<b>2nd Asian Preventive Cardiology &amp; Cardiac Rehabilitation Conference cum 7th Certificate Course in Cardiac Rehabilitation</b> Organised by: Hong Kong College of Cardiology Co-Chairman: Prof. LAU Chu Pak & Dr. LAU Suet Ting Speaker: Various # Hong Kong Convention & Exhibition Centre, 1 Expo Drive, Wanchai, Hong Kong Enquiry: Secretariat Tel: 2527 8285 Fax: 2865 0943 Email: dorahkma@hkma.org Website: <a href="http://www.apccrc.com">http://www.apccrc.com</a>
27-30/11/2008	<b>Human Dignity in Modern Medicine &amp; 14th Congress of Asian Federation of Catholic Medical Associations</b> Organised by: The Guild of St. Luke, St. Cosmas and St. Damian Hong Kong Chairman: Dr. Peter AU YEUNG Speaker: Prof. Fr Louis Aldrich SJ & Prof. Luke Gormally # Catholic Disease Centre Enquiry: Congress Secretariat Tel: 2363 0598 Fax: 3764 0579
20-22/2/2009	<b>CardioRhythm 2009</b> Organised by: Hong Kong College of Cardiology & Chinese Society of Pacing and Electrophysiology Co-Chairman: Prof. LAU Chu Pak Enquiry: Secretariat Tel: 2899 2035 Fax: 2899 2045 Email: info@cardiorhythm.com Website: <a href="http://www.cardiorhythm.com">http://www.cardiorhythm.com</a>

#### Courses

14,21,28/10/2008, 4,11,18,25/11/2008, 2,9/12/2008	<b>Certificate Courses on Ward Management Module I - Understanding Management Issues in the Workplace</b> Organised by: College of Nursing, Hong Kong Enquiry: Secretariat Tel: 2572 9255 Fax: 2838 6280
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Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
	★ Anterior Vaginal Mass <b>1</b>	★ FMSHK Officers' Meeting <b>2</b>	★ Tenth Refresher Course on Colposcopy <b>3</b>	★ HKMA Council Meeting <b>4</b>		★ HKMA Trailwalker Training Session V (Stage 4 - 6) <b>6</b>
★ HKMA Badminton Tournament <b>7</b>	★ HKMA ~ Shatin Community Network CME Lecture on Approach to somatic complaints by the elderly - a Psychogeriatrician's Perspective <b>8</b>			★ HKMA Structured CME Programme with Hong Kong Sanatorium & Hospital Year 2008 (IX) <b>11</b>		★ Refresher Course for Health Care Providers 2008/2009 (I) - Management of Psychosomatic Patients (Unexplained Medical Symptoms) <b>13</b>
	<b>15</b>		★ HKMA Golf Tournament ★ HKMA Orchestra Rehearsal <b>17</b>	★ (1) A Bloody Cough with a Bloody Twist & (2) A Young Man with Asthma and Haemoptysis ★ Certificate Courses on Legal Issues in Healthcare <b>18</b>		<b>20</b>
	<b>22</b>	★ FMSHK Executive Committee Meeting <b>23</b>	★ HKMA Orchestra Rehearsal <b>24</b>	★ Certificate Courses on Legal Issues in Healthcare <b>25</b>		★ 3rd Regional Conference in Dermatological Laser and Facial Cosmetic Surgery 2008 <b>27</b>
★ HKMA Badminton Tournament ★ HKMA Trailwalker Training Session VI (Stage 1 - 3) ★ HKMA Structured CME Programme at Queen Elizabeth Hospital Year 08/09 (VI) - Orthopaedics <b>21</b>	<b>29</b>	<b>30</b>				
★ 3rd Regional Conference in Dermatological Laser and Facial Cosmetic Surgery 2008 ★ HKMA Tennis Tournament Kick Off <b>28</b>						

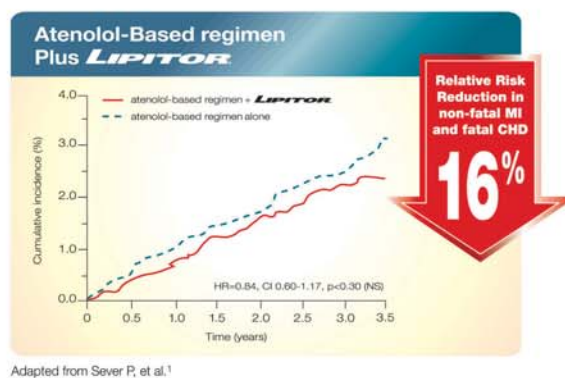
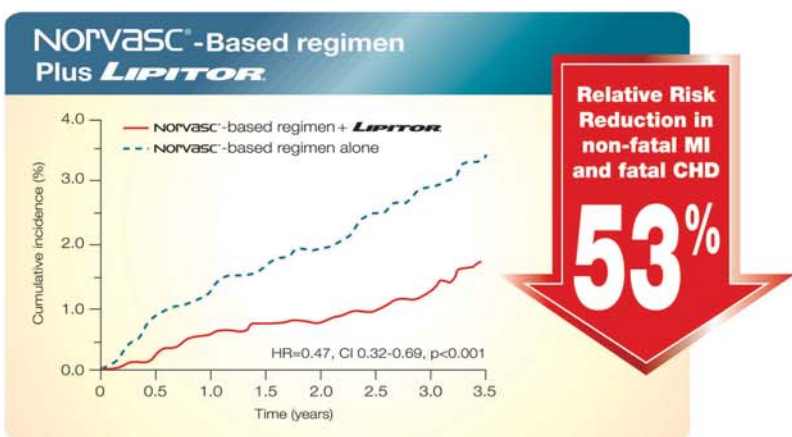


Date / Time	Function	Enquiry / Remarks
<b>1</b> 7:30 pm - 8:30 pm <b>MON</b>	<b>Anterior Vaginal Mass</b> Organised by: Hong Kong Urological Association Chairman: Dr. TO Kim Chung Speaker: Dr. CHU Wing Hong Ringo # Seminar Room, G/F, Block A, Queen Elizabeth Hospital, Kowloon	Dr. HUNG Hing Hoi / Ms. Siddy MA Tel: 2958 6006 Fax: 2958 6076 1 CME Point
<b>2</b> 8:00 pm - 10:00pm <b>TUE</b>	<b>FMSHK Officers' Meeting</b> Organised by: The Federation of Medical Societies of Hong Kong # 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
<b>3</b> 6:30 pm - 8:30 pm <b>WED</b>	<b>Tenth Refresher Course on Colposcopy</b> Organised by: The Hong Kong Society for Colposcopy & Cervical Pathology, Department of O&G, Queen Elizabeth Hospital Chairman: Dr. May CHAN Speaker: Dr. LI Wai Hon # Multifunction Room, G/F., Block D, Queen Elizabeth Hospital, Kowloon	Ms. Phyllis KWOK Fax: 2855 0947 2 CME Points
<b>4</b> 8:00 pm <b>THU</b>	<b>HKMA Council Meeting</b> Organised by: The Hong Kong Medical Association Chairman: Dr. H.H. TSE # HKMA Head Office, 5/F., Duke of Windsor Social Service Building, 15 Hennessy Road, Wanchai, Hong Kong	Ms. Christine WONG Tel: 2527 8285
<b>6</b> 7:30 pm <b>SAT</b>	<b>HKMA Trailwalker Training Session V (Stage 4 - 6)</b> Organised by: The Hong Kong Medical Association	Ms. Dora HO Tel: 2527 8285
<b>7</b> 2:00 pm <b>SUN</b> (21)	<b>HKMA Badminton Tournament</b> Organised by: The Hong Kong Medical Association # MacLehose Medical Rehabilitation Centre	Ms. Dora HO Tel: 2527 8285
<b>8</b> 1:45 pm <b>MON</b>	<b>HKMA - Shatin Community Network CME Lecture on Approach to Somatic Complaints by the Elderly - a Psychogeriatrician's Perspective</b> Organised by: HKMA - Shatin Community Network Chairman: Dr. LIN Wei & Prof. Samuel Y.S. WONG Speaker: Dr. Vivian LEUNG # Royal Park Hotel, Shatin, N.T.	Ms. Kitty TSANG Tel: 2964 2975 1 CME Point
<b>11</b> 2:00 pm <b>THU</b>	<b>HKMA Structured CME Programme with Hong Kong Sanatorium &amp; Hospital Year 2008 (IX)</b> Organised by: The Hong Kong Medical Association & Hong Kong Sanatorium & Hospital Speaker: Dr. WU Wing Cheung Stephen # 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 (Registration Fee is required) 1 CME Point
<b>13</b> 2:30 pm <b>SAT</b>	<b>Refresher Course for Health Care Providers 2008/2009 (I) - Management of Psychosomatic Patients (Unexplained Medical Symptoms)</b> Organised by: The Hong Kong Medical Association & Our Lady of Maryknoll Hospital Speaker: Dr. CHEUNG Kit Ying Andy # 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
<b>17</b> 11:30 am <b>WED</b> 8:00 pm (24)	<b>HKMA Golf Tournament</b> Organised by: The Hong Kong Medical Association # Hong Kong Golf Club <b>HKMA Orchestra Rehearsal</b> Organised by: The Hong Kong Medical Association # Pui Ching Education Centre	Ms. Dora HO Tel: 2527 8285 Ms. Candy YUEN Tel: 2527 8285
<b>18</b> 6:30 pm - 8:00 pm <b>THU</b> 6:30 pm - 8:30 pm (25)	<b>(1) A Bloody Cough with a Bloody Twist &amp; (2) A Young Man with Asthma and Haemoptysis</b> Organised by: Hong Kong Thoracic Society/ACCP (HK & Macau Chapter) Chairperson: Dr. KO Wai San Fanny & Dr. CHAN Hok Sum Speaker: Dr. TUNG Hon Man Alvin & Dr. LO Yi Tat # LG1, Lecture Room, Ruttonjee Hospital, Wanchai, Hong Kong <b>Certificate Courses on Legal Issues in Healthcare</b> Organised by: College of Nursing, Hong Kong	Dr. C.Y. TAM / Dr. Maureen M.L. WONG Tel: 2468 5407 Fax: 2468 6188 Secretariat Tel: 2572 9255 Fax: 2838 6280 24 CNE Points
<b>21</b> 7:00 am <b>SUN</b> 2:00 pm	<b>HKMA Trailwalker Training Session VI (Stage I - 3)</b> Organised by: The Hong Kong Medical Association <b>HKMA Structured CME Programme at Queen Elizabeth Hospital Year 08/09 (VI) - Orthopaedics</b> Organised by: The Hong Kong Medical Association & Queen Elizabeth Hospital Speaker: Dr. CHOW Kai Pun & Dr. MAN Shui Wah # Lecture Theatre, G/F., Block D, Queen Elizabeth Hospital, Kowloon	Ms. Dora HO Tel: 2527 8285 Miss Viviane LAM Tel: 2527 8452 (Registration Fee is required) 3 CME Points
<b>23</b> 8:00 pm - 10:00 pm <b>TUE</b>	<b>FMSHK Executive Committee Meeting</b> Organised by: The Federation of Medical Societies of Hong Kong # 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
<b>26</b> <b>FRI</b> (27,28)	<b>3rd Regional Conference in Dermatological Laser and Facial Cosmetic Surgery 2008</b> Organised by: The Hong Kong Association of Specialists in Dermatology & The Hong Kong Society of Dermatology and Venerology & Hong Kong Society of Plastic, Reconstructive and Aesthetic Surgeons # Hong Kong Convention and Exhibition Centre, Wanchai, Hong Kong	Ms. Ruby LUI Tel: 3151 8813 Fax: 2590 0099 Website: www.dlfc2008.com
<b>28</b> 7:30 pm <b>SUN</b>	<b>HKMA Tennis Tournament Kick Off</b> Organised by: The Hong Kong Medical Association # Kowloon Tong Club	Ms. Dora HO Tel: 2527 8285

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Reference: 1. Dahlöf B, Sever PS, Poulter NR, et al for the ASCOT steering committee members. Potential synergy between lipid-lowering and blood-pressure-lowering in the Anglo-Scandinavian Cardiac Outcomes Trial (ASCOT 2x2): a multicentre randomised controlled trial. *European Heart Journal* (2006) 27, 2982-2988. Detailed prescribing information is available upon request



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**Caduet<sup>®</sup>**  
amlodipine besylate/atorvastatin calcium

**CARDURA XL**<sup>\*</sup>  
4mg, 8mg once daily (doxazosin GITS)  
WITHOUT TITRATION

## Rapid Symptomatic Relief in Benign Prostatic Hyperplasia<sup>1</sup>



### Extended benefits over traditional $\alpha$ -blockers<sup>2</sup>

- Less postural hypotension<sup>2</sup>
- Eliminate the complicated titration steps<sup>2</sup>

References: 1. Roehrborn CG, Prajsner A, Kirby R, et al. A double-blind placebo-controlled study evaluating the onset of doxazosin gastrointestinal therapeutic system in the treatment of benign prostatic hyperplasia. *Eur Urol* 2005;48:445-452. 2. Kirby RS, et al. A combined analysis of double-blind trials of the efficacy and tolerability of doxazosin in the gastrointestinal therapeutic system (GITS), doxazosin standard, and placebo in patients with benign prostatic hyperplasia. Detailed prescribing information is available upon request.



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