



Management of Hypertension (Is There Anything New?)

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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 June 2005.

Guidelines have been set up to help the clinicians in their daily practice. (The JNC 7 report and 2003 ESH – ESC guidelines for the management of arterial hypertension.)

Target blood pressure (<140/90 mm of Hg) has been set for all patients with hypertension. On the other hand, the target blood pressure for disease patients should be <130/80 mm of Hg. Individuals with a systolic 120 to 139 mm of Hg or a diastolic BP of 80 – 89 mm of Hg should be considered a pre-hypertensive.

Pre-hypertensive requires health promoting life style modifications to prevent cardiovascular disease including a) smoking cessation, b) weight reduction, c) reduction of excessive alcohol intake, d) regular physical exercise, e) reduction of salt intake, f) increase in fruit and vegetable intake, g) decrease saturated and total fat intake and h) stress management. In addition, they need to be reassessed at regular intervals.

In addition to lowering blood pressure, treatment of all modifiable risk factors should be considered, including dyslipidaemia, smoking, diabetes mellitus and obesity.

Among dyslipidaemic patients, full lipid profile should include total cholesterol, HDL & LDL-cholesterol, and triglyceride. If one is contemplating drug treatment, direct assay of LDL-cholesterol should be considered.

Recently attention has been focused on patients with sleep apnoea and metabolic syndrome which are considered as identifiable causes of hypertension. Metabolic syndrome defines as the presence of 3 or more of the following conditions: abdominal obesity (waist circumference >102 cm [>40 in] in men or >89 cm [>35 in] in women), glucose intolerance (fasting glucose ≥ 110 mg/dl [≥ 6.1 mmol/l]), blood pressure of at least >130/85 mm of Hg, high triglyceride (≥ 150 mg/dl [≥ 1.7 mmol/l]) or low high density cholesterol <40 mg/dl [< 1.04 mmol/l] in men or <50mg/dl [< 1.3 mmol/l] in women.

For young patients and elderly patients whose blood pressure are not well under control with the usual dosages of drugs, one should exclude identifiable causes including drug-induced, renal vascular disease, adrenal or kidney

tumours. (Magnetic resonance imaging is useful to exclude adrenal, renal or renal vascular disease.)

Measurement of blood pressure

Blood pressure self measurements may benefit patient by providing information on response to antihypertensive medication, improving their adherence with therapy and in evaluating white coat hypertension. Home measurement devices should be checked regularly for accuracy. In addition, ambulatory blood pressure measurement should be used to assess labile blood pressure or symptomatic patients.

Treatment:-

1. Multiple medications are often required to achieve the target.
2. Therapy should be initiated gradually and blood pressure goal achieved progressively over several weeks.
3. Drugs are not equal in terms of adverse disturbances, particularly in individual patients. Patients are advised to report the side effects to their attending physicians.
4. Therapy can be initiated with a low dose of a single agent or with a low dose combination of 2 agents.
5. After starting with a low dose combination, the dose can then be raised or a low dose of a third agent added.
6. Therapy providing long-acting or 24 hr efficacy is recommended. The advantages of such medications minimise the blood pressure variability.
7. Thiazide diuretics, Beta blockers, ACE inhibitor, ARBs (Angiotensin II receptor blockers), and CCBs (calcium channel blockers) are recommended in the management of hypertensive patients.
8. The following drug combinations have been found to be effective and well tolerated.
 - a) diuretic and Beta-blockers
 - b) diuretic and ACE inhibitor or ARB
 - c) CCBs (dihydropyridine) and Beta-blocker
 - d) CCBs and ACE inhibitor or ARB
 - e) CCBs and diuretic





- f) α -blocker and Beta blocker
 - g) other combinations (e.g. with central agents, including α_2 adrenoreceptor agonists and imidazoline I₂ receptor modulators, or between ACE inhibitor and ARBs) can be used if necessary, and even three or four drugs may be required in many cases.
9. The choice of drugs depends on the underlying concomitant medical conditions.
 10. The ACE inhibitor or ARB-based treatments favourably affect the progression of diabetic nephropathy and reduce albuminuria.
 11. Recurrent stroke rates are lowered by the combination of an ACE inhibitor and thiazide-type diuretic (PROGRESS study using Perindopril based regimen).
 12. JNC7 recommended the use of Thiazid type of diuretic as initial therapy, either alone or in combination with 1 of the other classes (ACE inhibitors, ARBs, Beta blocker, CCBs). Compared with diuretic and Beta blockers, a reduction of new onset diabetic has been seen with ACE inhibitors, calcium antagonists, and with ARB (VALUE study using valsartan-based regimen). These new data certainly would affect our choice especially in the context of metabolic syndrome.
 13. The Anglo-Scandinavian cardiac outcome Trial (ASCOT) had to be stopped earlier than expected due to significant reductions in cardiovascular death and all cause mortality in patients taking CCB – based regimen (amlodipine besylate) versus a standard Beta blocker based regimen. In addition, they were less likely to develop diabetes compared to patients taking the Beta blocker-based regimen.

Improving hypertension control

Behavioural models suggest that the most effective therapy prescribed by the most careful clinician will control hypertension only if the patient is motivated to take the prescribed medication and maintain a health-promoting

life style. Common drug interactions may affect the blood pressure control e.g. NSAID, certain classes of COX II inhibitor and oral contraceptives.

Target organ damage

It includes heart, brain, chronic kidney disease, peripheral arterial disease and retinopathy. The need to consider concomitant lipid lowering depends on the presence of cardiovascular disease or stroke. Nowadays one could measure the carotid artery intimal thickness (CIMT) as an indicator of early atherosclerosis. Recent studies show certain classes of drug may slow the progression in CIMT in the common carotid bifurcation (Lacidipine in ELSA study, fosinopril in PHYLLIS study.)

Special consideration

Women with hypertension who become pregnant should be followed up carefully because of increased risks to mother and foetus. Methyldopa, Beta blockers and vasodilators are preferred medications for the safety of the foetus. ACE inhibitors and ARBs should not be used during pregnancy because of potential foetal defects and should be avoided for women who are likely to become pregnant.

I hope this short article can stimulate our thoughts in the management of our hypertensive patients. For details please refer to the following articles:-

- (1) 2003 European Society of Hypertension – European Society of Cardiology guidelines for the management of arterial hypertension (Journal of Hypertension 2003, 21 : 1011 – 1053)
- (2) The Seventh Report of the Joint National Committee on Prevention, Detection, Evaluation, and Treatment of High Blood Pressure (JAMA, May 21, 2003 – Vol 289, No. 19)
- (3) Recent press release from American Collage of Cardiology annual scientific meeting.

MCHK CME Programme Self-assessment Questions

Please read the article entitled “Management of Hypertension (Is There Anything New ?)” by Dr. Chun-ho Cheng 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 sheet via fax (2865 0345) or by mail to the Federation Secretariat on or before 30 June 2005. 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. Short acting drugs are recommended to treat hypertension.
2. Only beta-blocker and thiazide diuretic are recommended in the management of hypertensive patients.
3. Individuals with a systolic 120 to 139 mm of Hg or a diastolic BP of 80-89 mm of Hg should be considered a pre-hypertensive.
4. Risks factors including dyslipidaemia, smoking, diabetes mellitus are not important in the management of hypertensive patients.
5. Sleep apnoea has no relationship with hypertension.
6. The ACE inhibitor or ARB-base treatment reduces the progression of diabetic nephropathy.





7. NDAID or certain classes of COX II inhibitor may affect the blood pressure control.
8. Carotid artery intimal thickness study is useful in the detection of early atherosclerosis.
9. In the management of hypertension, multiple medications is not required to achieve the target.
10. Low HDL cholesterol is not a feature of metabolic syndrome.

ANSWER SHEET FOR JUNE 2005

Please return the completed answer sheet to the Federation Secretariat on or before 30 June 2005 for documentation. 1 CME point will be awarded for answering the MCHK CME programme (for non-specialists) self-assessment questions.

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Name: _____ HKID No. ____ - ____ X X (x)

Signature: _____ Contact TelNo.: _____

Answers to May 2005 issue

Thiazolidinediones, Adiponectin and Insulin Resistance

1) A. **F** B. **F** C. **T** D. **T** E. **T** 2) A. **T** B. **T** C. **F** D. **T** E. **T**

FMSHK 40th Anniversary Activities

To celebrate the FMSHK's 40th birthday, a series of special events and functions will be held year-round in 2005, a year which marks the history of FMSHK.

Spring

The FMSHK Art Exhibition

The Art Exhibition is our major cultural event in this very special year. The Exhibition has collected more than 170 pieces (subject to final confirmation) of contributions from fellow colleagues in the medical, dental and health sectors. It consists of brilliant works in photography, calligraphy, paintings and sculpture - just to name a few. It is a clear demonstration that apart from being aptly scientific at works, the profession also has a remarkable artistic side that is capable of touching the soul of audience at large.

We are extremely honoured to have Dr. Patrick Ho, the Secretary for Home Affairs - HKSAR Government, officiating at the Opening Ceremony. Dr. Ho, as you are aware, is not only a renowned ophthalmologist turned administrator but also a masterly violinist - example of an outstanding artist and medical profession in one. In the past years, Dr. Ho has been a good friend of the FMSHK and very supportive of our functions.

Opening Ceremony: 20th May at 6:00 pm

Exhibition hours:

6:00 pm - 7:45 pm (20th May 2005)

9:15 am - 7:45 pm (21st May 2005)

9:15 am - 4:00 pm (22nd May 2005)

Autumn

The FMSHK Golf Tournament

Date: October 2005

Venue: Fanling Golf Course, Hong Kong

Venue:

The Exhibition Gallery
Hong Kong Cultural Centre
Tsim Sha Tsui, Kowloon

Winter

The 40th Anniversary Gala Dinner

Date: 28 November 2005

Venue: Rm. 201, New Wing, The Hong Kong Convention and Exhibition Centre, Hong Kong

The President Cup - Soccer Five

Date: December 2005

Venue: A suitable sports ground in Hong Kong

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