

A statement for health care professionals on type 2 diabetes mellitus in Hong Kong

Diabetes Division, Hong Kong Society for Endocrinology, Metabolism, and Reproduction

Objective. To issue a statement for health care professionals on type 2 diabetes mellitus in Hong Kong.

Participants. The Diabetes Division was established under the auspices of the Hong Kong Society for Endocrinology, Metabolism, and Reproduction. The Division consists of medical and paediatric specialists, as well as health educators, including nurses, podiatrists, and dietitians who have a particular interest in diabetes.

Evidence. The statement was based on evidence from the available scientific literature on diabetes management from Hong Kong and overseas.

Consensus process. The draft statement was prepared on 16 February 2000 by a working group of diabetologists working in the public and private sectors. It was presented to the Council of the Diabetes Division on 7 March 2000 and approved by the Council of the Hong Kong Society for Endocrinology, Metabolism, and Reproduction on 11 March 2000.

Conclusions. Type 2 diabetes mellitus affects people of all ages and is a massive public health problem. The criteria used to diagnose diabetes mellitus have recently been revised. Physicians require increased vigilance to screen for glucose intolerance in individuals who have risk factors for type 2 diabetes mellitus. There are now recommended cost-effective procedures for the optimal management of type 2 diabetes mellitus, which emphasise regular monitoring, the control of both diabetes and associated risk factors, and self-management. To address this public health problem, concerted efforts by health care professionals and public bodies are needed to increase levels of awareness and improve the standard of care.

HKMJ 2000;6:105-7

Key words: Cooperative behavior; Diabetes mellitus, non-insulin-dependent; Hong Kong; Patient education; Public health; Risk factors

Introduction

- (a) One in 10 people in Hong Kong have diabetes mellitus; the prevalence ranges from 2% in people younger than 35 years to more than 20% in those older than 65 years.
- (b) The increase in the prevalence of diabetes mellitus with increasing age is caused by lifestyle factors, obesity, physical inactivity, and ageing.
- (c) The prevalence of young-onset type 2 diabetes mellitus (<40 years) is increasing and has a marked heterogeneity.
- (d) Diabetes is the leading cause of kidney failure, blindness, leg amputations, heart disease, and stroke.

- (e) Diabetic patients often have multiple risk factors such as hypertension, dyslipidaemia, and albuminuria, all of which increase the risks of the development of complications.
- (f) The optimal control of the blood glucose level and cardiovascular risk factors in patients with diabetes has been proved to reduce complication rates and is cost-effective.

Diagnosing glucose intolerance

- (a) Diabetes mellitus is defined as a fasting plasma glucose (PG) level of ≥ 7 mmol/L or random PG level of ≥ 11.1 mmol/L (two values in the same setting for asymptomatic individuals).
- (b) Impaired glucose tolerance (IGT) is defined as a fasting PG level of < 7 mmol/L, but 2-hour post-glucose load PG level of 7.8 to 11.1 mmol/L.
- (c) Impaired fasting glycaemia (IFG) is defined as a fasting PG level of 6.1 to 6.9 mmol/L after excluding diabetes mellitus or IGT from the results

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of a 75-g oral glucose tolerance test.

- (d) Individuals with IGT or IFG have increased cardiovascular risks and a tendency to develop diabetes mellitus.

Risk factors for diabetes

When the following risk factors are present, doctors should have increased vigilance and should consider screening patients for glucose intolerance and other cardiovascular risk factors:

- (a) Family history (first-degree relatives) of diabetes;
- (b) Overweight (body mass index, $\geq 23 \text{ kg/m}^2$);
- (c) Dyslipidaemia (especially with a high level of triglycerides);
- (d) Hypertension;
- (e) A history of gestational diabetes; or
- (f) Age of ≥ 45 years.

Self-management

Diabetic patients should be educated about the nature of diabetes mellitus and its complications, meal planning, the importance of the cessation of smoking, weight control, and regular exercise. They should also be encouraged to learn how to perform self-monitoring of blood glucose.

Physical assessments

- (a) At least two visits should be made each year, or more frequently, according to each patient’s needs and treatment goals.
- (b) At each visit, blood pressure and body weight should be measured; self-monitoring and weight-control programmes should be reviewed; and treatment goals discussed.
- (c) An annual foot examination should include checks

for pulses, sensation, skin changes, and deformities; a visual acuity test and fundal examination, preferably through dilated pupils, or retinal photography should also be performed.

Laboratory assessments

- (a) Glycated haemoglobin (HbA_{1c}) levels should be measured at least twice a year; a value of more than 130% of the upper limit of the normal range (eg 8% for a normal upper-limit value of $< 6\%$) calls for intensified treatment.
- (b) Urine measurements should be made annually to detect microalbuminuria; if the necessary facilities are not available, the dipstick test can be used to detect proteinuria.
- (c) An assessment of the lipid profile should be performed annually; tests should include the measurement of the total cholesterol level and levels of high-density lipoprotein-cholesterol and triglycerides; the level of low-density lipoprotein-cholesterol should also be calculated.
- (d) Electrocardiography or chest radiography should be performed when appropriate.

Special situations

The following special situations require co-management by diabetologists and other specialists:

- (a) Recurrent hypoglycaemia;
- (b) Preconception counselling;
- (c) Pregnancy management;
- (d) Young-onset diabetes;
- (e) Diabetic complications (eg nephropathy or retinopathy); or
- (f) Diabetic emergencies and surgery.

Treatment target values (Table)

Table. Treatment target values*

	Ideal control	Unsatisfactory control
Fasting plasma glucose (mmol/L)	4-6	≥ 8
HbA_{1c} † (x upper limit of normal percentage)	< 110	≥ 130
Body mass index (kg/m^2)	< 23	≥ 27
Waist circumference (male)	$< 75 \text{ cm}$ (< 30 inches)	$\geq 90 \text{ cm}$ (≥ 36 inches)
Waist circumference (female)	$< 70 \text{ cm}$ (< 28 inches)	$\geq 80 \text{ cm}$ (≥ 32 inches)
Systolic blood pressure (mm Hg)	< 135	≥ 160
Diastolic blood pressure (mm Hg)	< 85	≥ 95
Total cholesterol (mmol/L)	< 4.5	≥ 6.2
HDL‡-cholesterol (mmol/L)	> 1.1	< 0.9
LDL§-cholesterol (mmol/L)	< 2.6	≥ 4.2
Triglyceride (mmol/L)	< 1.5	≥ 2.8

* Adjust treatment goals depending on age, coexisting complications, and risk factors

† HbA_{1c} glycated haemoglobin

‡ HDL high-density lipoprotein

§ LDL low-density lipoprotein

Long-term strategy

Members of the Diabetes Division and the Hong Kong Society for Endocrinology, Metabolism, and Reproduction will continue to seek support and collaboration with other organisations to achieve the following goals:

- (a) To alert the community, health care professionals, and Government to the high prevalence of diabetes mellitus and the severity of its complications;
- (b) To better understand the causes and unique factors that contribute to the development of diabetes and its complications;
- (c) To reduce the prevalence of obesity and promote physical activity in the general population;
- (d) To increase the use of the currently available tools and resources to manage diabetes mellitus by better controlling all associated risk factors and complications; and
- (e) To initiate research, health care management, and educational programmes to improve the diagnosis and treatment of diabetes mellitus and its complications.

Acknowledgements

We thank Drs DSC Chang, KL Choi, GTC Ko, IT Lau, SC Siu, MW Tsang, K Tseng, and VTF Yeung for preparing the draft statement. Council members of the Diabetes Division include Drs JCN Chan (Chairman),

KL Choi (Secretary), KW Chan, CS Chang, CS Cockram, KF Huen, E Kwan, K Lam, J Ma, and SC Tiu, as well as Mss S Khor, T Lau, KM Loo, E Chan, and Mr M Yam. Council members of the Hong Kong Society for Endocrinology, Metabolism, and Reproduction include Drs S Chung (Chairman), A Kung (Vice President), FCC Chow (Treasurer), and PT Cheung (Secretary).

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* This statement was based on these references, as well as those contained in the seminar series of this issue (HKMJ 2000;6:43-84).

Second Hong Kong Diabetes and Cardiovascular Risk Factors East-Meets-West Symposium

*Department of Medicine & Therapeutics,
The Chinese University of Hong Kong*

30 September–1 October 2000

Hong Kong Convention & Exhibition Centre

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