DIABETES REVISITED

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SFP2008; 34(2): 4-5

THE COMPANY THAT DIABETES KEEPS

Diabetes is a member of the syndrome X described by Reaven[1] in the 1980s and a member of the deadly quartet of obesity, hypertension, diabetes, and hyperlipidemia described by Kaplan[2] in the 1990s. The modern day label for this deadly quartet is metabolic syndrome[3]. Of course, we do not need the full house of 4 to make the diagnosis. Today in 2008, we have a better understanding of the deadly quartet or metabolic syndrome. Yet we are not quite together – provider, patient, and system — in grappling with this cluster of health problems. This then is the challenge. Will we take steps big and small to break free of the disease burden and mortality that these 4 conditions bring with them?

The focus in this issue of the Singapore Family Physician is diabetes mellitus and a revisit is the intention, to look at the science of diabetic care, the patient perspective, and to be acquainted with the chronic disease management issues of this important and common disease.

The mention of the other three members of the deadly quartet is purposeful. To control diabetes mellitus and its consequences we need to work with the other three diseases in mind. Indeed, an improvement of all four is necessary to make a lasting impact on the reduction of disease burden. The first question we may ask ourselves in this revisit of diabetes is where are we in the state of control based on whatever recent data that we have.

WHERE ARE WE IN THE CONTROL OF DIABETES AND OTHER CHRONIC DISEASE IN SINGAPORE?

Two studies give us some perspective. The first is the Singapore National Health Survey Report[4] and the second is the study on specialist outpatient clinics[5]. Like all studies they give us an impression. They nevertheless also give us some direction on where to go forward.

The National Health Survey 2004

The Singapore National Health Survey 2004 report based on 4, 084 Singapore residents and a response rate of 57.7% gave some reassuring information but obviously we have still to get patients to work harder at changing their lifestyle towards healthier diets, exercise, and weight control.

Bhalla et al[4] report in the 2006 October issue of the Singapore Medical Journal that data from the 2004 survey compared to the 1998 survey shows that the age-standardised prevalence of hypertension (greater than or equal to 140/90 mmHg) in Singapore residents aged 30-69 years decreased from 28.0 percent in 1998 to 24.0 percent (p-value is less than 0.001) in 2004. The prevalence of high total cholesterol (greater than or equal to 6.2 mmol/L) among those aged 18-69 years fell from 26.0 percent in 1998 to 18.1 percent (p-value is less than 0.001) in 2004.

The prevalence of diabetes mellitus in residents aged 18-69 years in 2004 was 7.8 percent, compared to the 1998 level of 9.5 percent (p-value is less than 0.01). The level of obesity (body mass index is greater than or equal to 30 kg/sqm) increased slightly from 6.2 percent in 1998 to 6.8 percent (p-value equals 0.1627).

The prevalence of daily smoking decreased from 15.0 percent in 1998 to 12.5 percent in 2004 (p-value is less than 0.001), while that of regular exercise increased from 17.0 percent to 25.0 percent (p-value is less than 0.001).

Their conclusion was the survey suggests that the National Healthy Lifestyle Programme significantly decreased daily smoking, high blood cholesterol and hypertension, and increased regular exercise over 1998 levels. The results also suggest that the programme stabilised the prevalence of obesity and diabetes mellitus.

The specialist outpatient study

The quality of care of diabetic patients at the specialist outpatient clinics in public hospitals in Singapore have also been studied by the National Health Care group and reported in the 2007 December issue of the Annals of Academy of Medicine, Singapore. It was a cross-sectional study review of case-records of patients from 6 medical specialties who were on continuous care for a minimum of 15 months from October 2003 to April 2005. Total of 575 cases were studied.

The average rate for 9 process indicators (HbA1c; BMI; Blood pressure measurement; Urine albumin test; lipid profile; serum creatinine test; eye assessment; foot assessment; and patient education) by specialty ranged from 47.8% to 70.0%, with blood pressure measurement consistently high across all specialties (98.4%). There was significant variation (P <0.001) in rates across the specialties for 8 process indicators; HbA1c, serum creatinine and lipid profile tests were over 75%, while the rest were below 50%. The mean HbA1c was 7.3% +/-1.5%. "Optimal" control of HbA1c was achieved in 51.2% of patients, while 50.6% of the patients achieved "optimal" low-density lipoprotein (LDL)-cholesterol control. However, 47.3% of patients had "poor" blood pressure control. Adherence to process indicators was not associated with good

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intermediate outcomes. The conclusion was that there was large variance in the adherence rate of process and clinical outcome indicators across specialties, which could be improved further. Quite obviously, diabetes care is challenging to all.

THE TOTAL CONTROL STRATEGY

The six units of study in this issue together cover several aspects of the total control strategy as of 2008.

The health care team

Patients diagnosed with diabetes mellitus require a co-ordinated team of experienced health care professionals to support and guide them through the often complex and stressful day-to-day management of their illness. The patients need help to made adjustments in their lifestyles and adhere to medications in order to optimize their eventual outcomes as much as possible[6].

People with diabetes

Addressing the individual educational and psychosocial barriers to effective self-management and optimal quality of life is key to improving the outcomes of diabetes care. This was a finding of the global DAWN (Diabetes Attitudes, Wishes, and Needs) study, involving more than 5,000 people with diabetes and 3,800 healthcare providers in 13 countries. Psychosocial functioning of people with diabetes is a critical determinant of their clinical outcomes. Evidence-based psychological treatment guidelines, strategies and dialogue tools are becoming increasingly available to help patients overcome the psychosocial barriers to effective self-management[7].

The therapeutic aspects of diabetes care

There is now a great deal of development in the insulin, oral hypoglycemic agents, non-pharmacological strategies of TLC (therapeutic lifestyle change), and footcare. Targets have also been set to help both provider and patient alike track the outcome of care[8,9,10,11].

System factors

There is also the need to address system factors including funding and drug pricing which are not covered in the six units of study. The chronic disease model needs to be used. This has been described in various journals. Essentially, the idea is to have a six-point strategy to align the health system for disease management[12]: (1) Organisation of health care system which includes the funding mentioned; (2) Use of information technology; (3) Decision support which includes guidelines, and making sure the guidelines are practical for daily use; (4) Health care delivery system design which covers the practice team approach, integration for continuing of care, and planning of visits; (5) Enabling self-management by patients and their families which include teaching patients and families on self management of diet, exercise, medications, self-monitoring, and problem solving; and (6) Community resources which include self-help groups, home care services, voluntary welfare organizations, and hospital outreach programmes.

TRANSLATING DOWN TO CARE ISSUES

The current state of the art in diabetic management has transformed greatly over the years. The standard of care in monitoring eye and foot complications have risen and the use of HBA1C has been established. Hence, there is a possible huge gap between the current knowledge, attitudes and practices (KAPs) in the usual GP practices versus what is the ideal KAPs. This is more acutely felt in solo GP practices than in polyclinics since much of the management in diabetes is now team based. Where practices cannot be changed overnight, GPs would still do well to keep abreast of the current knowledge and attitudes in diabetic management.

Where gaps exist, the GP can fill this gap by referring to the right team member or to the Diabetic Society of Singapore. The anxiety most GPs have is in losing the patient for good once they have accessed polyclinic or specialist services. GPs anxiety must be allayed in order for more diabetic patients to have proper referral for retinal or foot checks."

It would be useful if a list of service venues where GPs can refer patients for the routine retinal and foot checks without losing the patient. This could be put up by Ministry of Health in its website.

CONCLUSIONS

Much has been achieved in defining the work to be done to help people with diabetes deal with their diabetes and help those at risk of diabetes to embark on diabetes prevention. Much more needs to be done. In this the total strategy need to be deployed.

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