HELPING PATIENTS REDUCE CARDIOVASCULAR RISK FACTORS

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Cardiovascular risk factors in a nutshell

Cardiovascular risk factors, acting singly and in concert result in atherothrombosis. The modifiable risk factors that are of undisputed importance namely, the so-called traditional cardiovascular risk factors are: cigarette smoking, hypertension, physical inactivity (sedentary lifestyle), obesity, dyslipidemia, and diabetes mellitus.

The major clinical manifestations of atherothrombosis are cardiovascular-related diseases, disabilities and deaths. These include coronary artery disease (CAD) (e.g., myocardial infarction, angina pectoris, sudden cardiac death); stroke (e.g., ischaemic stroke, transient ischaemic stroke) and peripheral artery disease (PAD) (e.g., intermittent claudication, and critical limb ischaemia).

Just how big is the problem? For the year 2006, of the 16,393 deaths out of a population amongst the 4,483,900 population in Singapore, ischaemic heart disease and cerebrovascular disease accounted for 18.5% and 8.9% deaths respectively. Together they caused 27.4% of total deaths for that year^{1,2}.

Can anything be done? The figures in the US give some idea. An analysis of the deaths from coronary disease (CAD) in the US from 1980 – 2000 showed a fall from 542.9 to 266.8 deaths per 100,000 population among men and from 263.3 to 134.4 deaths per 100,000 population among women. Approximately 47% of this decrease was attributable to treatments, and 44% to changes in risks factors – reduction in total cholesterol (24%), systolic blood pressure (20%), smoking prevalence (12%), and physical inactivity (5%)³.

Could the US figures be even better? The answer is – yes, definitely. It is known that in the US, sixty-five percent of people with hypertension have poor blood pressure control⁴, 62% with elevated low-density lipoprotein cholesterol levels have not attained lipid-lowering goals⁵, and 63% with diabetes have a hemoglobin A_{1c} level of more than 7%⁶.

What about Singapore? We do not have all the figures. Nevertheless, it is likely that our local figures may be quite similar to the US experience. Indeed, this is likely to be a worldwide state of affairs as far as control of cardiovascular risk factors go.

Insights

Is this a patient problem, a physician problem, or a system problem? The problem cannot be corrected without knowing. The answer is likely to be all three. Bodenheimer's case study of a patient with multiple cardiovascular risk factors and poor adherence to treatment plans in the November 2007 issue of JAMA defines the issues well in the US setting⁷. The patient is not well informed of the evidence that control of cardiovascular risk factors is effective in preventing such related disabilities and deaths; the physician is too busy to explain or implement the evidence based interventions in each visit. Various systems factors also stand in the way. Adequate reimbursement to allow practices to carry out the necessary patient care processes is necessary⁷. One study found that visits need to be at least 20 minutes to involve patients effectively in decision making⁸.

In a nutshell, the short physician visit and resulting lack of patient participation and education may be a primary reason why more than 60% of patients with hypertension, elevated cholesterol levels, and diabetes have poor control of their condition.

Getting the patient involved

A participatory relationship between patient and physician is one of the most successful factors promoting healthy behaviours⁷. The key elements in encouraging such participation in self-care are:

- Giving information.
- K Teaching disease specific skills.
- K Negotiate healthy behaviour change.
- K Sustained regular follow-up of lifestyle and medication behaviours.
- ^K Continuity of care and the physician being trustworthy.

Teaching disease-specific skills may be the most important component of self-management support. For example, measuring, recording, and reporting one's glucose levels are not sufficient: one must understand the meaning of the

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glucose values and how to adjust diet, exercise, or medication doses in response to those values. Patients with type 2 diabetes who learn to self-regulate insulin doses based on home glucose levels have better glycemic control than those who do not self-regulate⁹.

Healthy behavior change is a self-management support activity still searching for conclusive evidence. A review of 92 studies of diet behaviors found that goal setting or action planning was associated with eating less fat, and more fruits and vegetables¹⁰.

Sustained regular follow-up of lifestyle and medication behaviors is necessary in self-management support. Patients with diabetes who have regular follow-up have better hemoglobin A_{1c} levels than patients without follow-up¹¹. Similarly, regular follow-up is necessary for hypertension management¹².

Continuity of care and trust in the physician are also critical factors in self-management support. Patient's trust in the physician has been associated with improved medication adherence, better health-related behaviors, and continuity of care¹³.

Food for thought

The way ahead in helping patients reduce cardiovascular risk factors is to give information, coach the patient to participate in their self-care, and provide sustained followup care. Patients helped this way are more likely to succeed than the usual care.

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