

Challenges in the delivery of and adherence to secondary prevention in coronary heart disease

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Introduction

Doctors prescribe treatments, such as medications or advice on lifestyle or other activities, for their patients with the expectation that the treatments will be accepted and followed, and that the patients' conditions will improve. Conversely, patients will not benefit if they do not actually follow through with the prescribed treatments.

In patients with a history of coronary heart disease (CHD), a series of therapies and lifestyle modifications, usually referred to as secondary prevention measures, reduce cardiovascular risk factors, provide cardio-protection and reduce the risk of further recurrent clinical events. These measures include cessation of smoking, treating hypertension, decreasing sedentariness or increasing physical activities, reducing weight and controlling other risk factors. Routine use of several medications – aspirin, beta-blockers, ACE inhibitors and lipid-lowering drugs (particularly statins) – has been shown to provide effective secondary prevention by clinical trials. Patients with diabetes mellitus are at even higher risk of having cardiovascular complications and effective control of the diabetes with hypoglycaemic agents can also be regarded as secondary prevention therapy.

The care gap

Yet despite the wealth of information about the effectiveness and ready availability of these treatments, substantial proportions of individuals who would benefit from such treatments do not receive them. For example, in a Canada-wide study of hypertension, it has been reported that 42% of hypertensive individuals did not know they had hypertension, 16% knew they had hypertension but were not treated, 23% were treated but their blood pressure was not controlled and only 19% were treated and their blood pressure controlled.¹ Similar findings have been reported in studies conducted in other Western countries.^{2,3}

This is an example of the 'care gap' in the provision of healthcare, that is, there is a gap between what we know of the efficacy of a therapy, based on scientific evidence, particularly

clinical trial results, and the actual utilisation of the efficacious therapy in the real world. Tugwell et al reported that there are four components to the care gap.⁴ Two of these are more systemic in nature, namely the disease or condition may not be diagnosed (poor diagnosis) and the treatment may not be readily available (poor accessibility) because of costs or other reasons. The other two components, which form the focus of this discussion, relate closer to the doctors and patients. These are poor adherence or compliance by the patients and poor prescription by their doctors.

Patient adherence

It would be easy to say that if patients would just adhere to, or comply with, their prescribed treatments, all would be well. In practice, this is not as simple. Adherence is the extent to which a person's behaviour – taking medication, following a diet and/or executing lifestyle changes – corresponds with agreed recommendations from a healthcare provider.⁵ Adherence to long-term therapy is generally poor. In developed countries, adherence to long-term therapies in the general population is around 50% and is much lower in developing countries. This has been shown in many studies. A Canadian study has shown that the compliance at one year for ACE inhibitors was about 60% and for statins was only about 50%.⁶ In another study which tracked the two-year compliance of over 140,000 elderly Canadian subjects who were eligible for government-funded medications, adherence at one year to statin therapy was about 70% for people with a recent acute coronary syndrome, 65% for those with a history of CHD but dropped to only 40% in those prescribed these medications for primary prevention.⁷

The reasons for non-compliance or poor adherence among patients are many and complex. Factors that influence compliance include the complexity of the treatment (e.g. pill regimens that are taken once a day are better followed than those taken two or three times a day),⁸ availability of social support⁹ and costs of the medications.¹⁰ Whether the patient will comply with the treatment

can also be influenced very much by the patient's perceived self-efficacy and knowledge of the disease and treatment,^{9,10} available alternatives and real or perceived side effects. Another factor that can play a major role is the patient's perception of the severity of the disease or the degree of denial.⁹ In addition, if a treatment will cause a disruption in the person's usual lifestyle, adherence will be poor.⁹ This particularly applies to some interventions requiring lifestyle changes and may explain why successes at weight reduction, increases in physical activities and smoking cessation are poor.

In doctors' offices and, to a much greater extent, in cardiac rehabilitation programmes, realisation of these factors and the use of innovative strategies can be used to enhance patients' compliance.¹¹ These strategies include multiple approaches involving patient education, feedback and reminders, as well as the use of incentives. High compliance over a long period can be achieved and this has been demonstrated again and again when clinical trials are conducted. For example, in a long-term placebo-controlled, clinical trial examining the effects of a statin and an ACE inhibitor on coronary atherosclerosis, the compliance of 450 patients who were followed for an average of four years has consistently been over 90% during the whole trial.¹² The reasons for the high compliance were probably multiple. Patients who volunteered for the trial were aware of their disease and had 'bought' into the concept of the study. By signing the consent form and agreeing to take the study medications, they had in fact 'signed a contract' to be compliant. They were in touch regularly

with the study personnel who provided the reminders. An incentive could be that they would get easier access to healthcare by contacting the study personnel.

Cardiac rehabilitation programmes provide a similar support structure and have many of the similar features. Individuals who sign up for the programme have a greater understanding and acceptance of their disease and want to do something about it. They are more receptive to educational efforts and have ready access to, and can build rapport with, the programme personnel. Higher compliance can be achieved under these circumstances. The challenge for these programmes is how to maintain the compliance after the individuals have 'graduated' from them.

Doctor practices

The situation of poor patient compliance is compounded by the doctor's practice patterns. For example, in 1995, following the publication of the first European set of practice guidelines for secondary CHD prevention, the EUROASPIRE researchers found that, while 81% of patients were prescribed aspirin, just over 50% were on beta-blockers, 30% on ACE inhibitors and 19% on statins in 3,560 patients from nine European countries who were six months after their myocardial infarction (MI), coronary artery bypass surgery, percutaneous coronary intervention or acute coronary syndromes.³ The study was repeated in 1998 following the publication of the second set of European guidelines, in general the use of these medications remained sub-optimally low.

While there were some increases and the use of aspirin was at

84%, beta-blocker use remained at only 66%, ACE inhibitors at 43% and statins at 58%.¹³ Indeed, the EUROASPIRE II researchers who completed the study categorically concluded that “there is a collective failure of medical practice in Europe to achieve the substantial potential among patients with CHD to reduce the risk of recurrent disease and death”.¹³ These findings are, however, not isolated as similar findings have been reported in Canada and the US.

Poor prescription patterns by doctors have been widely studied and it is not just because doctors are not aware of recent developments about appropriate therapies. The doctor-patient interaction is very complex. Thus, while the process of delivery of care can be regarded as a simple encounter between the patient and the physician, the interaction between the caregiver and the recipient, and the thought processes which lead to the resultant decision and action, are complex and poorly understood.

It has been thought that timely and effective dissemination of the research evidence is effective in influencing physician knowledge and practice in order to close the care gap. Dissemination of results on completion of clinical trials and studies by formal publication in major medical journals, accompanied or followed by presentations at continuing medical education conferences at international, national and local levels, is the traditional form of dissemination of information on new developments to doctors. However, the fact that the care gap still exists against this background of educational activities suggests that more needs to be done. For example, new programmes,

such as mandatory maintenance of competence and physician re-certification measures, the use of local opinion leaders and the use of performance feedback, are designed to improve the effectiveness of continuing education programmes.

The Clinical Quality Improvement Network (CQIN) group in Canada has used the audit and feedback approach with success in the primarily hospital-based management of acute MI.¹⁴ In the management of congestive heart failure and anticoagulation therapy in atrial fibrillation, this approach has not been as successful.^{15,16} The latter finding suggests that different strategies are needed for dealing with acute hospital management as distinct from the long-term management of chronic diseases, in which more than one team of caregivers may be involved in the care of the same patients. In both situations, a systematic and effective communication process is required, with respect to both the decisions to initiate therapy and in the feedback of the practice patterns and outcomes.

Practice guidelines are widely used² but, as is shown in the EUROASPIRE and other similar studies, they have not been as effective as was hoped. One promising method is disease management, based on principles of total quality management and continuous quality improvement, concepts native to the manufacturing industry. Based on this concept, a set of guidelines incorporated into a critical path management tool in the management of acute MI was successfully used in nine Canadian tertiary and community hospitals that participated in a study from 1992 to 1996. This was in the form of a set of pre-

printed order forms for use by the admitting doctors and thus had been incorporated into the process of care. The in-hospital use of aspirin and beta-blockers in patients with acute MI increased significantly by 3% and 9% from pre-existing high levels of 89% and 62%, respectively. The use of thrombolytics remained unchanged at 45% and calcium channel blockers decreased by 8% from 35%. In-hospital mortality decreased by 1%, from 13% to 12%.¹⁷ Fonarow et al implemented a similar comprehensive programme of locally produced treatment guidelines, standardised admission orders, educational lectures by local opinion leaders, and tracking and reporting of treatment rates and reported similar results.¹⁸

It appears that in practice two ingredients are essential for closing this component of the care gap: knowledge of the therapeutic evidence and a method for effectively incorporating this evidence into patient care. A 'trigger' for reminding the doctor should be incorporated into the process of care. This trigger could be in the form of pre-printed order sheets, prominent printed reminders left in the patients' charts or even electronic triggers when electronic records are used.¹⁹ Other approaches include empowering the patients so that they can responsibly ask for the appropriate therapy, and to include other healthcare providers in providing the systematic trigger to the physician. Work in this regard, particularly by other healthcare providers, such as pharmacists and practice nurses, is being actively evaluated.²⁰

Conclusion

It may seem that steps in enhancing doctor prescription of treatment for their patient and the adherence of the latter to the prescribed treatments are separate processes. However, there are many common features. These include an awareness of and the wish to address the problems, an attention to details and a need to formulate plans that will be appropriate and specific to the local situations.

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