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Editorial

Beyond the Shadow: Getting Past the Veil of Nonadherence in the Management of Atherosclerotic Risk Factors

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See article by Lemstra et al., pages 574-580 of this issue.

Between the idea/And the reality/Between the motion/And the act/Falls the Shadow

—T.S. Eliot, *The Hollow Men*

Management of dyslipidemia, much like management of other atherosclerotic risk factors, remains a paradox. Dyslipidemia is a widespread condition and has unquestioned public health implications in the development of atherosclerotic disease. Furthermore, there are unquestionably effective therapies available to control low-density lipoprotein (LDL) with very favourable benefit-to-risk ratios. Notwithstanding, LDL cholesterol control rates in developed countries remain low (in the range of 30%-40%[1,2]) and far short of what is achievable under the most optimal conditions, ie, in the course of controlled clinical trials, where achieved control rates are often greater than 80%.[3]

There are multiple factors underlying these dismal statistics. They include medical environment, health care provider, and patient-centred factors. Among the latter, nonadherence (also known as "noncompliance," "nonconcordance," or "nonconvergence") has been identified as a very important factor. In this respect, the careful meta-analysis by Lemstra and colleagues is a timely reminder of what we know and don't know in regard to nonadherence to statin therapy.[4] In their survey of global related studies, they remind us that the reported nonadherence rates are greater than 50%. They found that patients are more likely to be adherent if (1) the use of statins is ongoing (vs new), (2) filling the prescription *does not* involve a copayment, (3) the statin is prescribed for secondary prevention (vs primary prevention), (4) hypertension is a comorbidity (and presumably being concurrently treated), and (5) the patient is not from a lower socioeconomic stratum of the population. Additionally, patients in whom the basis of the diagnosis of dyslipidemia is founded on more than 1 lipid profile are more likely to be adherent to a statin prescription.

What does this tell us specifically about nonadherence in patients with dyslipidemia being prescribed statins? Primarily it highlights that the determinants of nonadherence identified in this meta-analysis of patients with hypercholesterolemia parallels those determinants seen as nonadherence factors in patients taking other medications for a range of chronic diseases.[5,6] In regard to the differentiation of adherence between new statin takers and longer-term statin takers, we know from the hypertension literature that a large component of the nonadherent population includes those who never filled the first prescription and/or the first renewal.[7] Many of those patients are lost prior to ever establishing a productive drug-taking "behaviour."

The authors have identified several factors that relate the risk of nonadherence to the patient's understanding of the priority and/or urgency of treatment. Patients with pre-existing atherosclerotic disease (secondary prevention) and concurrent hypertension and those in whom a diagnosis was based on more than 1 lipid profile were all more likely to be persistent with statin therapy. What does this tell us about either the patients or their health care providers? We know from the work of Grover and colleagues that those patients who are made aware of their "global atherosclerotic risk" by such means as determining and sharing their vascular age are more likely to achieve risk factor control.[8] Presumably the improvement in cholesterol control was related, at least in part, to improved adherence. However, this intervention might have also improved control rates by reinforcing the priority of treatment to the patient's health care provider, ie, by reducing clinical inertia. Clinical inertia is conventionally viewed as a failure of health care providers to use therapy that is efficacious and effective in order to achieve risk factor control. As outlined by O'Connor and colleagues, this problem involves not only failure to initiate treatment but also failure to titrate treatment to goal, failure to set clear goals, underestimation of patient need, failure to identify and manage comorbid conditions such as depression, insufficient time, insufficient focus or emphasis on goal attainment,

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Table 1. Strategies to improve patient adherence (for blood pressure control)

Assist your patient to adhere by:	• Tailoring pill taking to fit patients' daily habits • Simplifying medication regimens to once-daily dosing • Replacing multiple-pill antihypertensive combinations with single-pill combinations • Using unit-of-use packaging (of several medications to be taken together) • Supporting patients' adherence to therapy via a multidisciplinary team approach
Assist your patients in getting more involved in their treatment by:	• Encouraging greater patient responsibility/autonomy in monitoring blood pressure and adjusting prescriptions • Educating patients and patients' families about their disease and treatment regimens
Improve your management in the office and beyond by:	• Assessing adherence to pharmacologic and nonpharmacologic therapy at every visit • Encouraging adherence with therapy by out-of-office contact (either by phone or mail), particularly during the first 3 months of therapy • Coordinating with pharmacists and work-site health caregivers to improve monitoring of adherence with pharmacologic and lifestyle modification prescriptions • Using electronic medication compliance aids

Modified from the 2012 Canadian Hypertension Education Program (CHEP) Recommendations[11] with permission from CHEP.

and reactive rather than proactive care.[9] We would concur with the view that clinical inertia may be part of a more pervasive syndrome beyond simply failing to escalate therapy when indicated.

Although it remains to be proven, it may be that failure of health care providers to employ effective tactics to improve the likelihood of healthy drug-taking habits required to maintain risk factor control may well be an additional and to date unrecognized component of the clinical inertia syndrome and be an important contributor to the nonadherence epidemic. Worse still, evidence suggests that well-meaning but ineffective efforts aimed at behaviour change can create harm.[10]

Given broad dissemination efforts in Canada regarding the importance of primary prevention of atherosclerotic disease targeting both health care providers and the general public, it appears that improved patient education efforts alone may be necessary but insufficient to adequately motivate improved uptake of therapies targeting controllable risk factors. Without empowering health care providers with the means to support their patients' drug-taking habits, we may be unable to make any further headway beyond that reported by Lemstra and colleagues.

What can we do to improve this sorry state? Although the research base in techniques to improve adherence to statin therapy is relatively undeveloped, we might be able to get some guidance from examining those methods shown to improve adherence in the management of hypertension, whose determinants of nonadherence mirror many of those identified for dyslipidemia. While Lemstra and colleagues suggest that interventions demonstrating effectiveness in improving medication adherence are expensive and time intensive and result in limited improvement, we would disagree. As demonstrated in the Canadian Hypertension Education Program recommendations, a number of approaches have been established to improve adherence and maintenance of risk factor targets.[11] At least for adherence with antihypertensive prescriptions, adherence is improved by use of a multipronged approach including techniques to help patients get organized and get more involved in their treatment and/or techniques for health care providers to incorporate adherence monitoring as a regular component of their patient interaction (see Table 1).

As a specific example, in regard to the authors' claim of noneffectiveness of these methods, in hypertension it has been consistently demonstrated that blood pressure control can be improved in a time- and cost-effective manner when clinical pharmacists assist with patient management. A systematic review of controlled clinical studies of pharmacist-assisted blood pressure management targeting both adherence and clinical inertia reported a mean reduction in systolic blood pressure of 9.3 mm Hg.[12] Additionally, the use of a range of motivational tactics (including brief interventions aimed at motivating the initiation and maintenance of healthy behaviours) was identified as being effective in improving control of other risk factors. In regard to their concern regarding the cost of these adherence-supporting interventions, it is important to note that the effect of nonadherence on excess long-term health care costs may be staggering in comparison with efforts aimed at behaviour change that are integrated into routine clinical care.

Not all the approaches shown to be effective in improving adherence to antihypertensive therapy are applicable to dyslipidemia. For example, there are currently no analogous self-monitoring approaches in LDL management comparable to those available in blood pressure control. The use of specific patient consultative approaches (eg, *how* to encourage patient responsibility/autonomy through the use of cognitive-behavioural therapy, motivational interviewing, or other approaches) would seem to be applicable in improving statin adherence. However, the utility of these approaches has yet to be tested in the management of dyslipidemia.

Lemstra and colleagues have enumerated several of the barriers limiting our patients' adherence to statin therapy. We would suggest that the broader application of specific methods both to improve patient adherence and to reduce health care provider clinical inertia are likely to provide the first steps down the long road to more effective lowering of both LDL cholesterol levels and LDL-related atherosclerotic disease.

Disclosures

The authors have no conflicts of interest to disclose.

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