



World Medical Association involvement in this area.

In another age, Sir William Osler said "to study medicine without books is to sail an uncharted sea." To put this in a 21st century context, we could say that to offer health care without full access to the information required for clinical decisions is to be forever at sea.

Part of the responsibility of having a high standard of medical professionalism, as we do in Canada, is to share medical and scientific information, knowledge and skills in medical informatics with colleagues in the developing world. We hope that the initiative announced in this issue will enjoy widespread support.

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Compliance in hypertension: Why don't patients take their pills?

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‡ See related articles pages 31 and 41

There is no longer any doubt that treating hypertensive patients can reduce the incidence of heart attack and stroke. One would think that by now most Canadians with hypertension would be normotensive because of appropriate drug therapy. However, this presumption was dispelled by the recently published Canadian Heart Health Survey.¹ The survey found that only 16% of adult Canadians with hypertension were receiving drug therapy and had normal blood pressure; an additional 23% were receiving treatment but remained hypertensive. The remainder were either untreated or unaware of their hypertension. Can these findings really be true, or was the survey in some way flawed? As much as one would like to attribute these negative findings to systematic errors in methodology, the 2 papers by Caro and colleagues^{2,3} appearing in this issue (pages 31 and 41) confirm the findings of the Canadian Heart Health Survey. These authors report that many residents of Saskatchewan with a diagnosis of hypertension discontinued antihypertensive medication within 6 months of initiating therapy, and persistence with antihypertensive therapy declined over the next 4 years.

No doubt many factors contribute to poor compliance with long-term antihypertensive therapy. Many patients have negative attitudes toward taking medication, especially if they "feel well."⁴ The almost-daily reports in the media on the possible adverse effects of drugs foster these

negative beliefs. As well, physicians may look more favourably on newer products, expecting them to be more effective and better tolerated than their predecessors. As a result, both patients and physicians more frequently attribute side effects to older compounds, such as diuretics and β -blockers. Then there are pharmacists who, as part of the counselling process, give patients lists of potential adverse effects of any medication they are about to receive. At this point, it may seem surprising that so many patients actually *do* take their medications as prescribed!

Several years ago, my colleagues and I had the opportunity to observe patient and physician behaviour in a multicentre study⁵ comparing the effects of ASA and placebo in patients with unstable angina. At 2 centres, participants and their family physicians were specifically told about the potential gastrointestinal side effects of ASA, whereas participants at a third centre were not. Six times as many patients in the group informed about possible side effects withdrew from the study because of minor gastrointestinal complaints, usually after consulting their family physicians, who confirmed the association between the study drug (presumed to be ASA) and the symptom. However, only 56% of the 200 patients who reported gastrointestinal symptoms were actually taking aspirin. Presumably, this behaviour is not limited to ASA, so it is not surprising that many patients report side effects while receiving antihypertensive therapy, especially when taking



the drugs most often perceived to cause untoward symptoms.

Another important factor in promoting long-term compliance with antihypertensive therapy is the use of simple treatment regimens. Long-acting agents are now available in each of the major classes of antihypertensive medication, so there is no longer any reason to prescribe drugs that must be taken more than once daily. Indeed, a recently published Canadian study⁶ showed that twice-daily antihypertensive therapy was associated with not only lower compliance but also less effective blood pressure control than a once-daily treatment regimen. Cost may also be a factor. For example, an angiotensin-converting-enzyme (ACE) inhibitor taken 2 or 3 times a day may cost twice as much as a similar drug taken once daily. Prescribing newer, expensive medications instead of diuretics and β -blockers as initial therapy may also be associated with lower compliance among patients who pay for their own medication.

Physicians should adhere to evidence-based medicine and prescribe drugs in accordance with national guidelines,⁷ having confidence in the efficacy and safety of established therapy. In comparative studies, diuretics and β -blockers did not produce any more side effects than ACE inhibitors or calcium-channel blockers. Indeed, measures of quality of life in the Treatment of Mild Hypertension Study⁸ were higher with chlorthalidone and acebutolol than with enalapril, amlodipine and doxazosin. Moreover, in the recently published Hypertension Optimal Treatment randomized trial,⁹ quality of life actually improved with more aggressive antihypertensive therapy. Nonetheless, physicians frequently associate the treatment of hypertension with side effects, and many believe that diuretics and β -blockers produce a much higher rate of adverse effects than the newer agents.

Physicians must also recognize and address the negative attitudes that patients frequently have about taking medication and be aware of their own biases (not substantiated by outcome data) against certain medications. Although one cannot control all the information available to patients, it should be possible to improve the material cur-

rently provided by pharmacists by making it more balanced and clinically relevant, with less emphasis on the warnings and side effects listed in the product monograph.¹⁰ Now that safe and effective drugs are available, we must focus on improving patients' adherence to long-term antihypertensive therapy. It may be time to re-examine the underlying causes of poor compliance, develop alternative treatment strategies, such as special treatment programs, and involve other health care professionals, such as nurse practitioners.

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