



The treatment of hypertension in Canada: Are we making progress?

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The trends in the prevalence, treatment and control of hypertension in Nova Scotia reported in this issue by Dr. Hermann K. Wolf and colleagues¹ (page 699) hold several important messages for both clinicians and policy-makers.

First, despite extensive public and professional education and the ready availability of efficacious treatments, hypertension remains the most common and most important risk factor for cardiovascular disease in North America.² Although Wolf and colleagues use a different definition of hypertension, the prevalence rates they report for Halifax County mirror the 20% previously indicated by nationwide surveys conducted in Canada³ and the US.⁴ Moreover, the age-related increases in prevalence they report were also seen in these larger data sets.^{3,4} However, it is important to emphasize that 73% of Canadians with hypertension are younger than 65 years,² and that — because the potential benefits of treatment (expressed as years of life saved) are greater in younger patients⁵ — the burden of disease associated with hypertension is greatest in middle-aged people.

Second, the treatment of hypertension is often suboptimal. Although the method used by Wolf and colleagues (taking 2 blood pressure readings in only a single visit) tends to underestimate the proportion of patients with well-controlled blood pressure,⁶ community blood pressure surveys consistently show that significant numbers of hypertensive patients are unaware of their diagnosis (42% in the Canadian Heart Health Survey [CHHS]), go untreated (19% in the CHHS) or have uncontrolled hypertension despite treatment (23% in the CHHS).^{3,4,7,8} Of particular concern is the fact that the steady improvements in the detection, treatment and control of hypertension observed since the early 1960s appear to have plateaued over the last 10 years. Although this may represent the outcome of appropriate care (with the current emphasis on absolute-risk treatment thresholds, clinicians may withhold antihypertensive therapy from those patients with elevated blood pressures but no other cardiovascular risk factors),⁹ recent increases in the age-adjusted incidence of stroke, congestive heart failure, myocardial infarction and end-stage renal disease (after steep declines from 1960 to 1990) would suggest otherwise.^{10,11} Defining the reasons and potential solutions for the persistent suboptimal management of hypertension should be a priority for researchers and health care policy-makers.

Third, there have been marked changes in pharmacotherapy (away from thiazides and β -blockers toward the newer antihypertensive agents, particularly angiotensin-converting-enzyme [ACE] inhibitors and calcium-channel blockers) over the past decade. This finding is not new,¹²⁻¹⁴ but it does raise the question of why this shift has occurred. There is no evidence that the newer antihypertensive agents are more efficacious, safer or better tolerated than thiazides or β -blockers (indeed, until recently there was no evidence that the newer agents reduced clinical outcomes such as stroke or myocardial infarction in hypertensive patients).¹⁵ Further, thiazides and β -blockers are the most cost-effective of the antihypertensive drugs and were the first-line therapy recommended in contemporaneous practice guidelines.^{13,14} Although it is possible that the increased popularity of the newer agents may reflect a high prevalence of contraindications for thiazides or β -blockers or comorbidities for which the newer agents are indicated — a hypothesis that cannot be tested with Wolf and colleagues' data — studies in other Canadian settings do not support this contention.^{14,16} Finally, we must acknowledge the potential role of the pharmaceutical industry's promotional strategies. Certainly, physician-targeted advertising for calcium-channel blockers and ACE inhibitors rose dramatically from 1985 to 1996, while β -blocker and diuretic advertising virtually disappeared.¹⁷ Although most clinicians would assert that they are not influenced by drug advertising, the few studies in this area suggest that commonly used marketing strategies do influence prescribing behaviour, particularly among high-volume prescribers.¹⁸⁻²¹ Thus, although it is difficult to weigh the numerous influences on physician prescribing behaviour retrospectively, the observed trends do not appear to have been evidence driven.

Fourth, the changes in pharmacotherapy have not resulted in better blood pressure control. Wolf and colleagues' study is consistent with cohort studies in other settings,^{22,23} but it must be recognized that these are only observational data. As such, these studies have numerous limitations that may affect their validity: principally, it is difficult to adjust for known confounders (such as the severity of hypertension and the presence of hypertensive target organ damage) in such studies and impossible to adjust for unknown or unmeasured confounders. Also, we do not have any information on drug dosages or patient com-



pliance with these agents. Moreover, it would be impossible to say whether any real differences in efficacy that may exist between the various agents would translate into differences in long-term cardiovascular morbidity and mortality. Thus, only randomized clinical trials that compare antihypertensive agents "head to head" for their effects on clinically important outcomes (such as the recently completed Captopril Prevention Project and the ongoing Antihypertensive and Lipid-Lowering Heart Attack Trial)^{24,25} can resolve the issue of whether the newer agents surpass, or even equal, the efficacy of thiazides or β -blockers.²⁶ Until these trials are available, we are left with interesting but unanswered hypotheses.

The study by Wolf and colleagues highlights a number of sobering realities in the contemporary management of hypertensive patients. In particular, it suggests that the changing patterns of pharmacotherapy for hypertension have resulted in increased costs without concomitant improvements in blood pressure control. Further research is needed to determine whether these changes in drug prescribing behaviour will translate into better or worse outcomes for hypertensive patients. In the interim, this study serves to emphasize the need to redouble our efforts in the management of these patients. Almost 1 million Canadians receiving antihypertensive treatment have poorly controlled blood pressure, and another 2.5 million are either unaware of their hypertension or are untreated.³ It is clear that much progress still needs to be made.

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