

Introduction

The Seventh Report of the Joint National Committee for the Prevention, Detection, Evaluation, and Treatment of High Blood Pressure supports the important role that calcium channel blockers (CCBs) play in the treatment of hypertension. These agents are distinctive for the impressive degree of blood pressure reduction they deliver, and may be appropriate choices for hypertensive patients who require pharmacologic therapy.

This issue of *Clinical Cornerstone*, “Treatment of Hypertension and Cardiovascular Disease,” reviews the latest information on the efficacy of CCBs for blood pressure reduction and the prevention of cardiovascular events. In the first article, Louis Michael Prisant, MD, discusses insights into the use of chronobiologic therapies, which deliver antihypertensive medications in concentrations that vary according to the body’s circadian rhythms. Use of these targeted therapies has the potential to reduce the risk of cardiovascular events that accompany the “morning surge” in blood pressure. Of the 4 chronotherapies currently available, 2 are formulations of the nondihydropyridine CCB verapamil. Both yield significant reductions in the morning blood pressure surge without excessive blood pressure reductions during periods of trough levels. In the community-based Controlling Hypertension in the MoRning with a ChrONO Medication study, verapamil-CODAS showed dose-dependent efficacy when used as monotherapy, both in patients who were untreated at study entry and in those who had failed previous antihypertensive therapy.

In the second article, Franz Messerli, MD, compares the data on calcium antagonists and β -blockers, and their respective impact on cardiovascular and cerebrovascular events. Of note is his discussion of a series of studies showing that blood pressure reductions with β -blockers are not accompanied by reductions in stroke risk to the same extent as calcium antagonists. Dr. Messerli compares β -blockers with nondihydropyridine calcium antagonists, observing

the greater degree of peripheral and coronary artery vasodilation seen with the calcium antagonists. He emphasizes the important role that the nondihydropyridine calcium antagonist verapamil plays in lowering heart rate in patients who are unable to tolerate β -blocker therapy.

Domenic Sica, MD, focuses on the role of CCBs in the treatment of black patients. Dr. Sica reviews the limitations of large-scale trials in which blacks have been underrepresented and discusses recent results from the African American Study of Kidney Disease and Hypertension (AASK) as they relate to CCB use. AASK is the largest and most comprehensive study to date addressing the potential for blood pressure control to reduce target organ damage in blacks.

In the next article, Dr. Sica discusses the effects on the kidney of blood pressure treatment with CCBs. Diabetes is the leading cause of end-stage renal disease, and the presence of diabetes is an indication for the use of CCBs. Among agents in the CCB class, the nondihydropyridines appear to have a superior renoprotective effect compared with the dihydropyridines due to their ability to reduce pressure inside the efferent as well as the afferent arteriolar tone.

Finally, Henry R. Black, MD, offers an in-depth analysis of the results seen with CCBs in the Antihypertensive and Lipid-Lowering Treatment to Prevent Heart Attack Trial, which compared cardiovascular end points with a CCB, an angiotensin-converting enzyme inhibitor, and a diuretic in more than 42,000 hypertensive patients at high cardiovascular risk. Although no significant difference was seen in the primary end point (fatal coronary heart disease or nonfatal myocardial infarction), the dihydropyridine CCB amlodipine demonstrated benefits in subgroups that included stroke patients.

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Editor