Treatment of Hypertension in Adults With Diabetes

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The treatment of individuals with diabetes has evolved greatly over the years, with the greatest change occurring in only the past few years. One of the most obvious changes has been movement away from the "glucocentric" management of diabetic patients. For years, health care providers who cared for diabetic patients concerned themselves almost entirely with the blood glucose level. Management consisted of doing what was necessary to keep the blood glucose level from being too high in order to prevent long-term diabetic complications or, in some circumstances, from being too low to prevent other disasters. Now providers who care for diabetic individuals are advised to deal with, in addition to blood glucose levels, other comorbidities, such has hypertension, dyslipidemia, and coronary artery disease (CAD), which occur so frequently in our patients.

The treatment of hypertension in adults with diabetes is one such issue. Hypertension occurs in 25–75% of individuals with diabetes and can be seen both as a consequence of diabetic nephropathy or in its absence. The presence of hypertension in diabetic patients not only is a risk factor for the development of CAD as it is in nondiabetic individuals, but also increases the risk and progression of both diabetic nephropathy and diabetic retinopathy. Thus, the management of hypertension should be an important matter to health care professionals who care for diabetic patients.

Each January, the American Diabetes Association publishes updated versions of its various position statements in a supplement to the journal *Diabetes Care* known as the "Clinical Practice Recommendations." Among the many position statements included in this supplement is one titled "Treatment of Hypertension in Adults With Diabetes,"[1] which is reprinted in this issue starting on page 122.

The majority of the evidence-based recommendations for this position statement came from a technical review[2] of which I was the senior author. This extensive review of the topic required multiple revisions and took years to complete. The difficulty in completing it was the result of the rapid changes that were occurring in the field. Every time we thought we had a final version, some new study or studies would be published that would require us to revise so that our treatise would not be obsolete before it was even published. Such is the nature of the evidence regarding the management of hypertension in adults with diabetes; it is ever-changing.

The 2003 version of the position statement differs in some important ways from the one published in 2002. Most of these deal with the choice of drugs to be used. The 2002 version mentioned the various drug classes in a general context; the 2003 version is much more specific. For example, it is suggested that for diabetic patients (both type 1 and type 2) with clinical nephropathy, angiotension-converting enzyme (ACE) inhibitors and angiotensin receptor blockers (ARBs) should be considered as first-line therapy to prevent or delay progression of renal disease. There is still no recommendation that these drugs be used for prophylaxis in the absence of hypertension or evidence of nephropathy (i.e, albuminuria).

Other changes include suggestions for the initial treatment of uncomplicated hypertension. Drugs that have demonstrated benefits in reducing cardiovascular disease, such as ACE inhibitors, β-blockers, and diuretics, should be preferred over drugs from other classes. For patients who cannot tolerate ACE inhibitor therapy, ARBs should be substituted. The statement reminds us to monitor renal function and serum potassium levels for individuals taking ACE inhibitors or ARBs.

Finally, the new position statement clearly enumerates the advantages of ACE inhibitors in slowing the progression of diabetic nephropathy in patients with type 1 diabetes with any degree of albuminuria, with or without hypertension. In type 2 diabetes, there is also good evidence that ARBs and ACE inhibitors delay the progression from microalbuminuria to macroalbuminuria. Also ARBs should be considered as first-line therapy in type 2 diabetic patients with hypertension, microalbuminuria, nephropathy, or renal insufficiency.

In summary, the recommendations for treatment of hypertension in adults with diabetes are ever-changing. Treatment targets have been lowered (we now aim for blood pressure <130/80 mmHg), and specific recommendations

for drug therapy have been given. With or without associated diabetic nephropathy, strong consideration should be given to therapy with ACE inhibitors or ARBs as first-line therapy for hypertension. Other drugs should be used as circumstances and side effects dictate. In my opinion, the management of hypertension in diabetes has become as important and as challenging as the management of blood glucose.

REFERENCES

[1]American Diabetes Association: Treatment of hypertension in adults with diabetes (Position Statement). *Diabetes Care* 26 (Suppl. 1)S80–S82, 2003

[2]Arauz-Pacheco C, Parrot MA, Raskin P: The treatment of hypertension in adult patients with diabetes (Technical Review). *Diabetes Care* 25:134–147, 2002

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