The Role of Beta-Blockers In Treating Hypertension

More than a quarter of the world’s adult population - nearly one billion people - have hypertension.1 Beta-blockers have long been recommended as first-line therapy in hypertension management guidelines. Consequently, they are one of the most prescribed drug classes in the U.S., with four different beta-blockers among our country's top 50 prescription drugs.2

In the last several years, however, the efficacy of using beta-blockers as first-line therapy has come into question. A number of large studies and meta-analyses have suggested that patients with uncomplicated hypertension may be at greater risk of stroke with no benefit for the endpoints of all-cause mortality and cardiovascular mortality and morbidity.

• A 2015 meta-analysis evaluating 13 randomized controlled trials of beta-blockers compared to other antihypertensive drugs showed that the relative risk of stroke was 16% higher for beta-blockers than for other drugs and there was no difference in terms of myocardial infarction (MI). When the effect of beta-blockers was compared with that of placebo or no treatment, the relative risk of stroke with beta-blockers, about half the risk reduction expected from previous trials using other agents and there was no difference for MI or mortality.3

• In a 2006 analysis, compared to placebo, beta-blockers reduced the risk of stroke with a marginal fall in total cardiovascular events, but beta-blockers had no effect on all-cause mortality, coronary heart disease, or cardiovascular mortality. The effect on stroke was less than that of calcium-channel blockers (CCBs) and renin-angiotensin system (RAS) inhibitors, and the effect on total cardiovascular events was less than that of CCBs.4 The analysis concluded that beta-blockers are inferior to CCBs and to RAS inhibitors for reducing several important hard end points. Compared with diuretics, they had similar outcomes, but were less well tolerated.

• In 2007, the Journal of the American College of Cardiology (JACC) reported that despite three decades of using beta-blockers for hypertension, no study has shown that beta-blocker monotherapy reduces morbidity or mortality in hypertensive patients, even when compared with placebo.5 The same 2007 JACC article points to a number of other problems associated with beta-blocker therapy:
  • Beta-blockers are often not well tolerated, and the compliance rate is poor.
  • Hypertension management guidelines recommend weight loss in obese hypertensive patients. Beta-blocker side, however, has been associated with small but systematic weight gain.
  • Beta-blockers antagonize the proper functioning of the sympathetic/nervous system, a critical function for exercise endurance; therefore may hamper exercise capacity.
  • The LIFE and ADOPT studies showed a substantially increased risk of developing diabetes with beta-blocker-based therapy when compared with other treatment options.

Conclusion

Given the accumulated evidence about beta-blockers, the physicians of Appleton Cardiology Associates do not see sufficient evidence to support the use of beta-blockers as routine initial therapy for hypertension. We encourage you to contact one of our cardiologists if you’d like to discuss effective alternative treatments for your patients.

References:

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