



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 morbidity and mortality.

- A 2005 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 was reduced by 19% for all 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 This 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 articles 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 use, 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 ASCOT studies showed a substantially increased risk of developing diabetes with beta-blocker-based therapy when compared with other treatment options.

References:

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3. Lindholm LH, Carlberg B, Samuelsson O. Should beta blockers remain first choice in the treatment of primary hypertension? A meta-analysis. *Lancet* 2005;366:1545-53.
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Beta-Blockers in Uncontrolled or Complicated Hypertension

Beta-blockers may be indicated in people with hypertension, irrespective of their blood pressure effect, with symptomatic angina, chronic stable heart failure and after myocardial infarction. There are also circumstances in which alternative treatments may be poorly tolerated or contraindicated, or ineffective at controlling blood pressure; in these circumstances beta-blockers could reasonably be used to lower blood pressure, as the benefits exceed no treatment at all.

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.