

Hypertension: Beta-blockers effective in combination therapies

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Using beta-blockers as a second-line therapy in combination with certain anti-hypertensive drugs significantly lowers blood pressure in patients with hypertension, according to a systematic review by Cochrane Researchers. This review also goes some way to explaining the differences in the way that patients respond to beta-blockers and other classes of blood pressure lowering drugs.

Beta-blockers are commonly used in the treatment of hypertension ([high blood pressure](#)) to help reduce the risk of [stroke](#) and [cardiovascular disease](#). They can be used alone or as a second-line therapy in combination with a wide range of anti-hypertensive drugs. The idea behind combining two different drugs to treat hypertension is that each has a different mechanism of action and thus may help tackle different mechanisms involved in causing the condition. In this way, greater decreases in blood pressure may be achieved than with single drug therapy.

The review included 20 trials involving a total of 3,744 patients. Overall, the researchers found that adding beta-blockers as the second-line drug, in combination with thiazide diuretics or calcium channel blockers, caused an additional blood pressure reduction. The reduction was around 30% greater when the dose was doubled.

This data was compared with a Cochrane Review published in Issue 4, 2009 that examined the blood pressure lowering effect of second-line thiazide diuretics. They concluded that the two drugs produced different

patterns of blood pressure lowering. Second-line beta-blockers were found to be more effective at reducing diastolic blood pressure (the minimum pressure in the arteries between beats when the [heart](#) relaxes to fill with blood) but had little or no effect on pulse pressure, while second-line thiazides significantly decreased pulse pressure in a dose-related manner.

"We feel that these findings are generalisable to most patients being treated for [hypertension](#) where a beta-blocker is added as a second-line drug to a first-line thiazide," said lead researcher, Jenny Chen, who works in Pharmacology and Therapeutics at the University of British Columbia in Vancouver, Canada. "The finding that beta-blockers produce a different pattern of blood pressure lowering to thiazides when used as second-line drugs certainly deserves further attention as it might explain why beta-blockers appear to be less effective than thiazide diuretics at reducing adverse cardiovascular outcomes, particularly in older individuals."

"The major limitation of this work is that we only know what happens when you add beta-blockers to thiazides and calcium channel blockers. It is possible that adding [beta-blockers](#) to other classes of drugs might produce a different result," said Chen.

Provided by Wiley

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