Dual renin system blockade gives further BP reductions

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The combination of the novel direct renin inhibitor aliskiren and the angiotensin II type 1 receptor blocker valsartan lowers blood pressure (BP) more effectively than either drug alone, study results suggest.

Findings from the first large-scale study designed to assess the effects of dual renin-angiotensin-aldosterone-system (RAAS) blockade were presented at the American College of Cardiology 56th annual scientific sessions, held in New Orleans, Louisiana, USA.

For the trial, researchers randomly assigned 1797 patients with a mean sitting diastolic (D)BP of 95-109 mmHg to the combination of aliskiren 150 mg and valsartan 160 mg, aliskiren 150 mg alone, valsartan 160 mg alone, or placebo once daily for 4 weeks.

After this 4-week period, doses were titrated up to double the initial dose over the next 3 weeks, and patients' DBP and systolic (S)BP levels were measured at baseline, week 4, and week 8.

In addition, 24-hour ambulatory BP monitoring (ABPM) was performed in a subset of patients at baseline and week 8.

The patients on the combination therapy were most likely to reach their target BP level of 140/90 mmHg, with a BP control rate of 49.3% compared with 37.4% on aliskiren alone, 33.8% on valsartan alone, and 16.5% on placebo.

The mean reduction in sitting DBP was also greatest among patients who received combination therapy, at 10.5 mmHg compared with 7.5% among those on aliskiren, and 8.7% among those on valsartan at the 4-week stage. These reductions were all significant compared with that seen in the placebo group, at 4.8% ($p<0.0001$).

The combination also produced greater reductions in SBP than either drug alone, at 15.3 mmHg versus 1.7 mmHg with aliskiren and 10.9 mmHg with valsartan at 4 weeks. Again these were all significantly different from the 5.2 mmHg reduction seen in the placebo group.

The greater BP-lowering effect with the aliskiren/valsartan combination persisted at 8 weeks. Indeed, the differences in both DBP and SBP reductions compared with both drugs alone became significant ($p<0.001$).

Finally, 24-hour ABPM revealed that patients on the combination therapy experienced the greatest reductions in BP.

There were no serious side effects in any of the groups and adverse event rates were similar in each, indicating that the combination therapy was tolerable, the researchers noted.

"Aliskiren and valsartan are both effective antihypertensives, but they function very differently," said lead author of the study Suzanne Oparil (University of Alabama at Birmingham School of Medicine, USA).

"Marrying these two treatment options will give physicians a more effective way to control high BP in their patients."

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