

## **DIRECT RENIN INHIBITOR FOR THE TREATMENT OF HYPERTENSION: A SYSTEMATIC REVIEW**

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Direct renin inhibitors have theoretical advantages over angiotensin converting enzyme inhibitors and angiotensin receptor blockers and produce significant blood pressure reductions. We conducted a systematic review to analyze whether Aliskiren, a direct renin inhibitor, is efficacious in reducing systolic and diastolic blood pressure and safe in patients with mild to moderate hypertension.

MEDLINE and Renal Health Library were searched for randomized clinical trials (RCTs) comparing Aliskiren and placebo for the treatment of mild to moderate hypertension. Two independent reviewers independently assessed trial quality and extracted relevant data. Results were expressed as weighted mean difference (WMD) for continuous and as relative risk (RR) for dichotomous outcomes with 95% confidence intervals (CI) using a random effects model.

Four RCTs (2639 patients) were included. In comparison to placebo, Aliskiren use resulted in mean reductions in systolic blood pressure (4 RCTS, 2639 patients, WMD -5.77, 95% CI -10.14, -1.40) and (4 RCTS, 2639 patients, WMD -8.73, 95% CI -12.69, -4.76) with the 150mg and 300mg doses respectively. Aliskiren also resulted in mean reductions in diastolic blood pressure (4 RCTS, 2639 patients, WMD -3.38, 95% CI -5.67, -1.08) and (4 RCTS, 2639 patients, WMD -4.23, 95% CI -5.68, -2.78) with the 150mg and 300mg doses respectively. Tests for heterogeneity were significant and this could be attributed to the different patient populations and the presence of comorbid illnesses. The safety profile and withdrawal rate of Aliskiren was similar to that of placebo.

Current available literature provides evidence that Aliskiren is efficacious in reducing systolic and diastolic blood pressure along with a safety profile similar to that of placebo. Long term studies analyzing Aliskiren effects on hard end points such as cardiovascular and renal outcomes are warranted.