

ARBs reduce BP in prehypertensive patients

Clinical question What is the effect of treating prehypertension with an angiotensin-receptor blocker?

Bottom line This study tells us what we already know (that is, that blood pressure medicines reduce blood pressure), but says nothing about what really matters: does intervention in patients with prehypertension improve patient-oriented outcomes? The choice to study such an expensive drug (candesartan) is also disappointing, but not surprising. Given that the number needed to treat (NNT) to prevent one stroke, heart attack, or death in patients with mild hypertension is 140 for five years (www.jr2.ox.ac.uk/bandolier/index.html), it is likely that the actual clinical benefit of treating prehypertension is even smaller.

Synopsis There is an increasing push to define patients as prehypertensive or prediabetic, and patients and prescribers may feel pressure to initiate treatment despite the absence of evidence that active treatment improves outcomes for these "prediseased" patients. In this industry-sponsored study, patients with prehypertension (systolic blood pressure [BP] of between 130 and 139mmHg and diastolic BP of less than 89mmHg or a systolic reading of less than 139mmHg and a diastolic reading of between 85 and 89mmHg) were randomised (allocation concealed) to receive either candesartan 16mg daily or matching placebo. After two years, all patients were given placebo for two years to see if there was any residual effect of treatment. The primary outcome during the four-year study was the incidence of hypertension, defined as an average BP of

140/90mmHg or higher during any three visits, a BP of 160/100mmHg or higher at any one visit, or a BP of 140/90mmHg or higher at the final visit. The average age of patients was 49 years, 59 per cent were men and 82 per cent were white. Analysis was by intention to treat, with the last observation carried forward in the event of missing data.

Not surprisingly, giving BP medication lowers blood pressure: patients receiving candesartan were less likely to have hypertension during the first two active treatment years of the study (13.6 per cent vs 40.4 per cent; $P < 0.001$; NNT 4). After two additional years of treatment with placebo there was still a small residual decrease in the incidence of hypertension requiring treatment (53.2 per cent vs 63 per cent; $P = 0.007$; NNT 10). There was no difference between groups in adverse events, and cardiovascular morbidity or mortality was not reported.

Level of evidence 1b (individual randomised controlled trial with narrow confidence interval)

Reference Julius S, Nesbitt SD, Egan BM, et al, for the Trial of Preventing Hypertension (TROPHY) Study Investigators. Feasibility of treating prehypertension with an angiotensin-receptor blocker. *New England Journal of Medicine* 2006;354:1685–1697.

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