



Evening dosing of antihypertensive drugs more effective in lowering blood pressure

Clinical question

What are the time-related effects of evening versus morning administration of once-daily antihypertensive drug monotherapy on all-cause mortality, cardiovascular morbidity and blood pressure (BP) reduction in patients with primary hypertension?

Bottom line

Based on data for six classes of antihypertensive drugs (ACE inhibitors, angiotensin II receptor blockers, calcium channel blockers, diuretics, alpha- and beta-blockers), evening drug administration caused an additional lowering of 24-hour systolic BP by 1.71mm Hg and 24-hour diastolic BP by 1.38mm Hg. The clinical significance of this is not known. No RCT reported on all-cause mortality, cardiovascular mortality or morbidity and serious adverse events. There were no significant differences between the two regimens on overall adverse effects and withdrawals due to adverse effects.

Caveat

Meta-analysis showed significant heterogeneity across trials. Most trials had a risk of bias in at least two of several key criteria.

Context

Variations in blood pressure levels display circadian rhythms. The morning surge in blood pressure is known to increase the risk of myocardial events in the first several hours post-awakening. Guidelines have recommended using once-daily, long-acting antihypertensive drugs to provide more consistent 24-hour BP control, reduce BP variability, and improve adherence to therapy.¹

Cochrane Systematic Review

Zhao P et al. Evening versus morning dosing regimen drug therapy for hypertension. Cochrane Reviews, 2011, Issue 10. Article No.: CD004184. DOI: 10.1002/14651858.CD004184.pub2.
This review contains 21 studies, involving 1,993 participants.

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Reference

1. World Health Organisation – International Society of Hypertension guidelines for the management of hypertension. J Hypertens 1999;17;151–83.

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