

## Article of Interest

Hermida, R, et al. Chronotherapy Improves BP Control and Reverts the Nondipper Pattern in Patients With Resistant Hypertension. Hypertension. 2008. (Click to Access)

## Context and Study Objective

Anti-hypertensives are generally prescribed for morning consumption. Given the benefits of 24 hour blood pressure (BP) control, Hermida explored the impact of adjusting the time of medication administration ("chronotherapy") on ambulatory BP control.

## Design, Setting, and Participants

A randomized, open-label trial was conducted among those with resistant hypertension. Those with cardiovascular (CV) disease, diabetes, or kidney disease were excluded. Baseline 24 hour ambulatory monitoring was performed while on a morning 3 drug regimen consisting of a diuretic, ACE/ARB, and either a CCB or doxazosin. Upon study initiation, patients continued with morning administration of the diuretic and RAAS blocker but were randomized to receive the alternate 3rd agent (i.e. CCB if taking doxazosin) in either the morning or evening. 24 hour ambulatory blood pressure monitoring was then repeated.

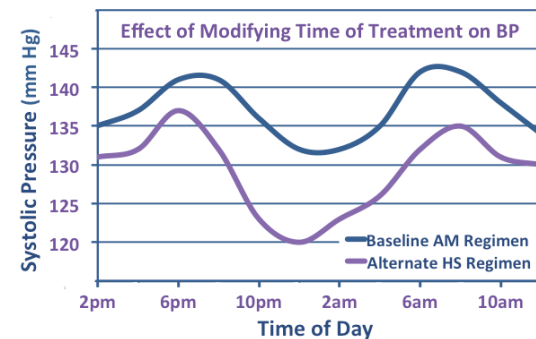
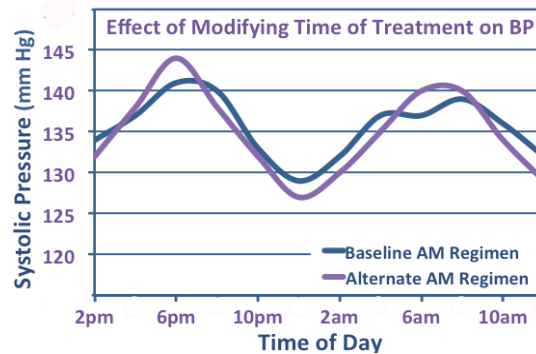
## Results

-Study characteristics: 250 of 312 eligible patients participated; 50% were women. No data on ethnicity was provided. Mean age was 60. 24hr mean BP was 137/79 mm Hg, and Cr 1.0 mg/dL. At study onset, equal numbers of patients were on doxazosin or a CCB.

-Regardless of the dosing regimen, office BP before and after the intervention were identical.

-Top Figure: By ambulatory monitoring, there was no difference among those randomized to morning dosing of the alternate 3rd agent compared to their usual regimen.

-Bottom Figure: Those randomized to nighttime dosing experienced a marked decline in BP (vs their prestudy regimen), particularly during the overnight hours.



## Clinical Perspective

-I find chronotherapy to be a valuable tool in the treatment of all hypertensives. It can avoid the need for additional agents and allows for enhanced BP control in the early morning hours when the CV event rate is highest.

-Despite the change in dosing time, office pressures were identical in each arm. This is not unusual given visits occur during daytime hours, a period during which medications taken in the morning remain in effect. Conversely, clinic readings fail to capture BP elevations during the overnight and early morning hours when medications that lack a 24 hour effect wane.

-Limitations: The study was open-label in nature. It only included those who were free of CV, diabetes and kidney disease limiting its generalizability. While specific diuretic and CCB selection could have impacted BP control, the randomized nature of the trial eliminated this confounder.