COMMENTS AND RESPONSES

Comment on: Hermida et al. Influence of Time of Day of Blood Pressure–Lowering Treatment on Cardiovascular Risk in Hypertensive Patients With Type 2 Diabetes. Diabetes Care 2011;34:1270–1276

Hermida et al. (1) have recently shown an impressive reduction of asleep blood pressure and associated reduction of cardiovascular disease (CVD) events in type 2 diabetic patients treated with at least one antihypertensive drug at bedtime compared with patients who ingested all drugs in the morning. This is a subgroup analysis of the diabetic patients (20%) enrolled in the MAPEC (Monitorización Ambulatoria para Predicción de Eventos Cardiovasculares [Ambulatory Blood Pressure Monitoring for Prediction of Cardiovascular Events]) study previously reported (2).

The study raises some mainly methodological questions and comments:

- The inclusion criteria regarding status of hypertension are unclear. Were the patients newly diagnosed or known hypertensive patients on treatment?
- The established goal for clinic blood pressure in diabetes is <130/80 mmHg. Why did the authors consider a daytime blood pressure <135/85 mmHg to be controlled?
- The authors provide no information on the number and type of antihypertensive medications used at baseline.
- The randomization procedure to morning or evening drug intake is not described, and it is unclear for the latter group how further randomization to awakening or bedtime treatment was done "separately for each allowed individual hypertension medication" (1 [Supplementary Data]).
- How many patients randomized to bedtime intake finally took one, two, or three drugs at bedtime?
- Was the effect on sleep time blood pressure reduction independent of the drug class ingested at bedtime?
- The 95% CI for event rates in Table 2 and for hazard ratios in Fig. 2 are missing.
- The association between final asleep blood pressure quintiles and hazard ratio for CVD events in the total study population (Fig. 2) may reflect reverse causality; i.e., patients with low sleep blood pressure have less advanced diabetes complications including less autonomic neuropathy and consequently a good prognosis (3). Have the authors performed a similar analysis for quintiles of baseline asleep blood pressure?

Finally we will draw attention to a short term study from another Spanish group (4).

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References

1. Hermida RC, Ayala DE, Mojón A, Fernández JR. Influence of time of day of blood pressure–lowering treatment on cardiovascular risk in hypertensive patients with type 2 diabetes. Diabetes Care 2011;34:1270–1276
2. Hermida RC, Ayala DE, Mojón A, Fernández JR. Influence of circadian time of hypertension treatment on cardiovascular risk: results of the MAPEC study. Chronobiol Int 2010; 27:1629–1651
3. Nakano S, Fukuda M, Hotta F, et al. Reversed circadian blood pressure rhythm is associated with occurrences of both fatal and nonfatal vascular events in NIDDM subjects. Diabetes 1998;47:1501–1506
4. Tofé Povedano S, García De La Villa B. 24-hour and nighttime blood pressures in type 2 diabetic hypertensive patients following morning or evening administration of olmesartan. J Clin Hypertens (Greenwich) 2009;11:426–431