

Ambulatory BP: Should it be required?

Practices are beginning to change a lot regarding where and how we measure blood pressure as technological advances are becoming more available and more valuable. Ambulatory blood pressure monitoring, as well as home monitoring and measurements of central blood pressure, are contributing a lot to our understanding of what to measure and where to measure it. Ambulatory blood pressure monitoring is an old technique that provides 24 or 48 hours worth of readings taken about every 20 minutes, including about every half hour at night. You get a graph that helps you determine what the average blood pressure is, and on a good study you may have 70 or 80 readings, although this is still just a small "biopsy" of the number of blood pressures we get.

We also divide patients into what we call dippers, extreme dippers, nondippers, and risers. When you compare the daytime and the nighttime levels, risers are people whose blood pressures are higher at night; if the level drops between 10% and 20% we call these patients dippers; if it drops more than 20% they're called extreme dippers; and if it drops between 0 and 10% we call them nondippers. This turns out to have prognostic significance. The nondippers and the risers seem to fare worse in most of the epidemiologic studies.

Now, several countries in Europe, Asia, and South America have put together a large database of more than 11,000 subjects who have had ambulatory blood pressure monitoring for over 7 years.^[1] This has been monitored for outcomes. Investigators looked at the group that had elevated blood pressures and the group that didn't, and, not surprisingly, more men [than women] were hypertensive, more men had diabetes, more men had cardiovascular outcomes, and it looked as if the absolute risk was higher in men than it was in women. When they analyzed the various elements of that 24-hour monitor, however, some very interesting surprises occurred. The main one was that 24-hour ambulatory blood pressure monitoring and especially nighttime blood pressure, generally the hours from 10:00 p.m. to 6:00 a.m. or when the subject actually was asleep, was a very important predictor of outcomes in women. We would never pick up these changes with office readings or even with home monitoring, which does not include taking blood pressure readings during the night.

References

- 1- Boggia J, Thijs L, Hansen TW, et al; International Database on Ambulatory Blood Pressure in Relation to Cardiovascular Outcomes Investigators. Ambulatory blood pressure monitoring in 9357 subjects from 11 populations highlights missed opportunities for cardiovascular prevention in women. *Hypertension*. 2011;57:397-405. Epub 2011 Jan 24.