

The Dipper Status – Do We Really Need to Fight for It?

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Editor

The idea of 24 hours blood pressure monitoring started more than 20 years ago [1] using semi-automatic devices, but even today we still need to inflate a cuff and listen to the Korotkoff sounds or to assess the maximum expansion of the artery when the pressure inside the cuff equals the mean blood pressure (the oscillometric method, used in actual ABPM devices). It is generally accepted that ABPM is a useful technique to evaluate the efficiency of the antihypertensive therapy, but there are more and more discussions about the relation between non-dipper status and cardiovascular risk.

The “dipper” status is defined by the European Society of Cardiology as a minimum of 10% decrease in the blood pressure [BP] during the night [2]. Patients without this BP dip are considered “non-dippers”, although more dipping profiles exist today (mild dippers, extreme dippers, reverse dippers, etc), even if those patterns are not easily reproducible [3]. Several published articles are suggesting that the non-dipper status is associated with increased cardiovascular risk [4, 5] especially in chronic renal disease patients [6] and some authors recommended changing the medication timing, in order to convert non-dipper patients to dipping status.

The HALT study showed that doxazosin administration at bedtime decreased the nighttime blood pressure by 12mm Hg in non-dippers and by 18mm Hg in risers ($p < 0.05$) [7]. A dipper status can sometime be obtained using other medication too (dihydropyridines or ACEI by ex.). Diuretics will reduce the likelihood of nocturnal dipping, because the patient will be often going to the bathroom. Choosing a long-acting ACE inhibitor (perindopril, for example) can give good results, too. Unfortunately, people with severe chronic renal disease, with high cardiovascular risk, seem to be less able to convert to a dipper status [8]. There are also studies that show there is no significant effect related to bedtime dosing [9, 10]. Moreover, “inducing” a dipper status, without changing the original condition which led to the non-dipper status might not be very effective. Sleep disorders, obstructive sleep apnea are often associated with elevated blood pressure levels and the effective treatment of apnea often converts a non-dipper to a dipper status [11].

The use of commonly available ABPM devices has a few drawbacks, the patient may feel uncomfortable, especially during the night, the cuff inflation wakes him and it can lead to increased BP. In patients with arrhythmias, such as

atrial fibrillation for example, we will often find inaccurate measurements and that is the reason why patients with AF have been excluded from all trials using ABPM and from validation protocols of ABPM devices [12].

So, if we have to answer to the question “Do we really need a dipper status”, except for patients with chronic renal disease, where we have studies suggesting that there is a clear benefit, we really do not know. For the moment, The European Society of Cardiology does not suggest different therapies among dipping profiles. Moreover, it seems that a non-dipper status is not associated with structural cardiac alterations [13].

Conflict of interest

None to declare.

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