

Does isolated systolic or diastolic nocturnal fall of blood pressure have a signification?

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Objective: Usually blood pressure (BP) decreases during the night. Dipping is defined as a day-night difference of SBP and DBP $\geq 10\%$. At the opposite, non-dipping ($< 10\%$) has been associated with a higher risk of target organ damage. The present study focuses on the clinical significance of a particular subgroup of non-dippers (partially non-dippers) characterized by an isolated non-dipping in SBP or in DBP.

Methods: OBP and 24H ABPM (Spacelabs 90207) have been performed on 68 unselected patients (42 men and 26 women). Dipping is expressed by the formula (%): (Daytime BP - Nighttime BP)/Daytime BP. The three groups have been distinguished: 1°: Dippers (n = 41); 2°: Really non-dippers (n = 11) and 3°: Partially non-dippers (n = 16).

Results: OBP and heart rate do not differ between the 3 groups, and same observation is done for the 24H means BP and their variability as well as the BP load. The mean dipping indicates that, as expected, the group of partially non-dippers has an intermediate amplitude (SBP: $8 \pm 2\%$ and DBP $12 \pm 3\%$) which is significantly different from the 2 other groups (Dippers: SBP $13 \pm 5\%$ and DPB $18 \pm 6\%$ and really non-dippers: SBP $1 \pm 6\%$ and DBP $5 \pm 3\%$) ($p < 0.001$). This is more evident for the SBP dipping, which is not surprising, knowing that 94% (15/16) of the patients in that group are non-dippers exclusively for the SBP. Partially non-dipping concerns specially men rather women [81% (13/3)]. However if the mean diastolic dipping is greater in the partially non-dippers group compared to the really non-dippers, it remains significantly lower than the one of dippers patients ($p < 0.001$). Daytime BP, variability and BP load do not differ, but comparison between mean nighttime SBP and DBP as well as the nighttime BP load indicate that SBP remains significantly ($p < 0.001$) higher in really non-dippers and partially non-dippers compared to the dippers. During the night, mean DBP remains only higher in really non-dippers group ($p < 0.001$). In the 2 groups with impaired dipping, nighttime SBP load is higher than in the dippers one ($p < 0.001$), the DBP load is only significantly lower in dippers patients ($p = 0.003$). No difference are observed between nighttime SBP and DBP variabilities. Prevalence of White-Coat hypertension is the highest in the dippers (39%) and the lowest in the partially non-dippers (12.5%) ($p < 0.001$). The prevalence of hypertension (ABPM) is significantly higher (62.5%) in partially non-dippers than in really non-dippers (54%) and in dippers (34%) ($p < 0.001$).

Conclusions: Our results outline characteristics of what we called partially non-dipping (non-dipping in SBP or DPB). Patients in that subgroup reveal intermediate level of ABPM parameters between dippers and non-dippers. Future studies on that particular dipping are needed to assess their corresponding risk of cardiovascular complications.

Circadian rhythm and seasonal variation

Diastolic blood pressure

Heart diseases

Risk factors

Systolic blood pressure

Time factors