

Is ABPM Indicated for all Hypertensives and Normotensives? Is Supportive Evidence Available?

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Hypertension is directly responsible for 80% of stroke occurrences, and for 40% of heart ischemia conditions in Brazil. The two conditions account for 40% of deaths in our country¹. Although there are no nationwide epidemiologic studies available, the Ministry of Health – based on non-pooled data – estimates hypertension prevalence in Brazilian adult population to be at least 20%². Therefore, fighting hypertension must be seen as a priority in Public Health.

From that angle, it is redundant to say that it all starts with the correct diagnosis of hypertension. Traditionally, hypertension diagnosis is based on doctor's office records, preferably at two or more different occasions, as recommended by the IV Brazilian Guidelines on Hypertension³. The prognostic information that individuals with blood pressure values above 140/90mmHg when measured at the doctor's office have shown to be under higher cardiovascular risk is unquestionable in populational terms⁴. However, some issues deserve further discussion.

Even if all care is taken for accurate measuring of blood pressure at the office – from proper positioning of patient up to the use of calibrated sphygmomanometers – two aspects related to the very nature of blood pressure biological characteristics may lead to non-correct measuring: BP renowned variability in the 24-hour period, which means to say, one measure – isolatedly - is not necessarily representative of pressure behavior all day long. Additionally, the “white coat effect” – an alarm reaction when in the presence of the doctor - may significantly raise blood pressure⁵.

ABPM and blood pressure measuring at the doctor's office

Based on the very nature of the method, in addition to exceeding the very limitations of blood pressure office measuring, ambulatory blood pressure monitoring (ABPM) provides quite a number of data on blood pressure behavior, such as mean blood pressure values at different points of

time in the day, blood pressure during sleep, pressure load, and different analyses on blood pressure variability (standard deviation, early morning surge, etc.), which, at lower or higher relevance, have also shown to be useful in identifying patients at high cardiovascular risk^{6,7,8}.

A higher efficiency as compared to BP measured at the office has proven not to be based on theoretical grounds only. In a number of cross-sectional studies, at least one of the variables obtained from ABPM showed to be superior to doctor's office measures when correlated to the various lesions in target organs: myocardial hypertrophy, lacunal cerebral infarctions, proteinuria, levels of hypertensive retinopathy, and myointimal thickness of carotid arteries⁹.

ABPM in treated and non-treated hypertensives

A number of prospective studies had the purpose of analyzing the role played by ABPM in the prognosis of cardiovascular events in non-treated hypertensives. At least two AMBP variables - blood pressure means and nocturnal blood pressure fall - showed to be ABPM unequivocal advantages in more properly identifying patients under higher risk^{10,11}. Similarly to the prospective studies carried out with non-treated hypertensives, at least one cohort study is already available, analyzing AMBP in patients under drug treatment. Results were again favorable to ABPM¹².

ABPM in the general population

More recently, two cohort studies have validated those results for the general population as well. The Ohasama study published data on a 10-year follow-up with 1,332 individuals from a Japanese rural community. Those data confirmed observations already carried out when circumscribed to the five first years of follow-up: ABPM blood pressure means (awake, during sleep, and in the 24-hour period) are better markers for cardiovascular prognosis when compared to doctor's office measuring of BP, particularly mean blood pressure values during sleep¹³.

Any criticism against extrapolating those results to a Western, predominantly urban population - as the Brazilian population - was dissipated by the results of a Danish study that had ABPM records of 1,700 individuals from the general population in Copenhagen. After a 9 1/2-year period of follow up, that population also showed additional prognosis through ABPM¹⁴. Just as pressure taken at the office, the study showed a positive and linear correlation between 24-hour mean blood pressure and the risk of cardiovascular mortality.

Conclusions

Therefore, although ABPM has not yet been included as a diagnostic algorithm for hypertension by any of the international societies that have published related guidelines, ABPM indication to confirm

hypertension diagnosis may be made compulsory at no distant future due to the benefits it offers as compared to measures taken at the doctor's office, as pointed out earlier. Otherwise, the best evidence available will have been denied¹⁵.

The major obstacle for immediate implementation of such conduct is undoubtedly the prohibitive cost it would represent to any health manager trying to support it, whether at the public or private environment. However, with technology progressively becoming more affordable, cost/effectiveness of such approach will be evident.

Illustration 1, adapted from a suggestion made by Verdecchia¹⁶, exemplifies how ABPM may be useful to diagnose hypertension, also providing additional stratification of cardiovascular risk, as well as acting as a guide for therapeutic orientation.

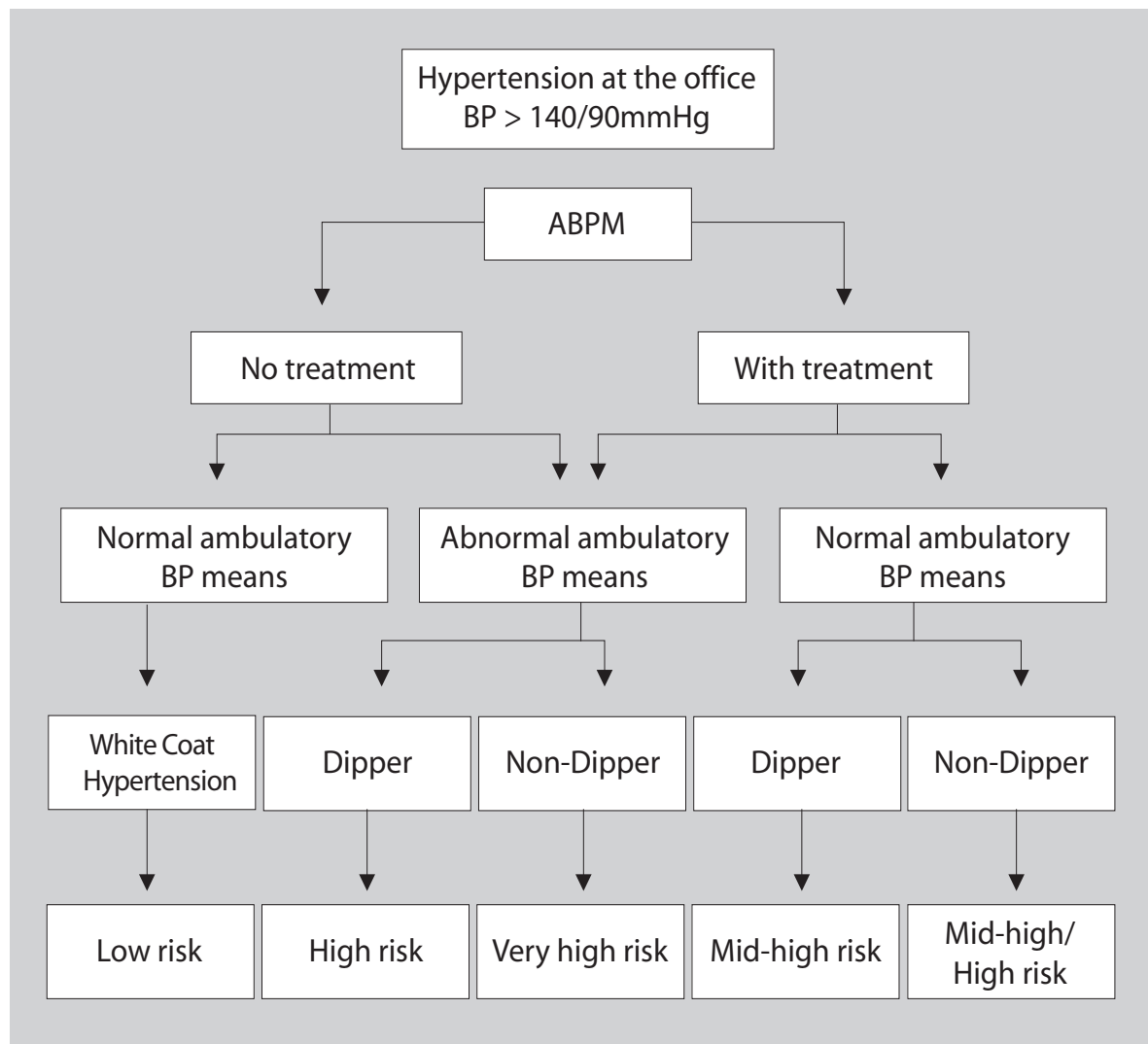


Fig. 1 – Stratification of cardiovascular risk based on ABPM means and on night decrease of blood pressure in treated and non-treated patients.

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