

White Coat Hypertension and Simple Out-of-Office Blood Pressure Measurement

Rifat Eralp Ulusoy

Professor of Cardiology, Darulaceze Cad Turkiye Hastanesi
Kardiyoloji Servisi
Turkey



COLUMN ARTICLE

Abstract

White coat hypertension is a previously defined clinical entity, which is related with cardiovascular risk and heart disease. The purpose of this editorial column is to highlight this subject with the help of a recently published meta-analysis recommending simple home-blood-pressure measurements for the follow-up of white-coat-hypertension patients and avoidance of unnecessary medication.

Keywords: *Hypertension; White Coat Hypertension; Blood Pressure*

Thomas Pickering first described the white coat hypertension (WCH) in 1988 as “normal blood pressure measurements despite normal office blood pressure measurements” [1].

This high blood pressure pattern is associated with an increased cardiovascular risk compared to the normotensive population and well known since the first description of this concept.

The European Society of Hypertension (ESH) and the European Society of Cardiology (ESC) were updated Hypertension guidelines in 2013 [2]. According to these clinical definitions, three office blood pressure measurements above or equal to 140/90 mmHg measured by a doctor and a 24-hour ambulatory blood pressure measurement outcome as 130/80 mmHg or daytime blood pressure measurement outcome as 135/85 mmHg or patients' home blood pressure monitoring considering clinically as normal ($\leq 130 - 135/85$ mmHg) was defined as WCH [2].

Prevalence of WCH can be found in about 15 - 45% of the general population and can be found in a significant proportion (one-third or more) of individuals diagnosed with hypertension [2]. Therefore, WCH has been reported to be associated with higher target organ damage comparing to normal blood pressure subjects [2].

Clinical findings of this WCH are female preponderance, older age, non-smokers, emerging hypertension, and when inadequate follow-up blood pressure measurement performance. Untreated white coat hypertension comparing to the treated demonstrated an increased cardiovascular events and all-cause mortality. Once isolated office hyper-

tension has been identified, metabolic risk factors such as diabetes, high cholesterol, and target organ damage should be investigated. If organ damage or a high risk of cardiovascular disease is identified, drug therapy should be initiated. Lifestyle changes and close monitoring are recommended to all patients, with or without medication. Since the diagnosis can be made with 24-hour blood pressure Holter measurements and home follow-ups, these tests should be considered for diagnosis, especially in individuals with no visible increase in clinical blood pressure but with multiple risk factors and target organ damage.

A recently published meta-analysis highlighted the differences between the clinical outcomes of treated and untreated WCH [3]. This meta-analysis included 27 studies with 25786 treated and untreated WCH comparing to 38487 normal cases followed for an average of 3 to 19 years [3]. Untreated WCH was associated with an increased risk for cardiovascular events, all-cause mortality and cardiovascular mortality [3]. Treated WCH demonstrated no significant associations of all these outcomes.

We can conclude that untreated WCH comparing to normal blood pressure individuals needs close monitoring with out-of-office blood pressure measurements for transition to sustained Hypertension [3]. This transition to sustained Hypertension often uncaptured because of neglecting a simple home blood pressure measurement yielding the increased risk of heart disease and death. Another important conclusion from this meta-analysis is that untreated WCH following with home blood pressure measurements with normal values do not need any medication at this time unless transition to sustained hypertension. This will potentially put individuals at risk of low blood pressure out-of-office, unnecessary drug side effects as well as increasing the amount of health payments.

This meta-analysis provides contemporary data supporting recent Hypertension guidelines that recommend simple out-of-office blood pressure measurements for screening WCH and transition from WCH to sustained Hypertension.

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