

FROM THE FAMILY PRACTICE INQUIRIES NETWORK

What is the best way to treat patients with white-coat hypertension?

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■ EVIDENCE-BASED ANSWER

Evidence is conflicting regarding the risk of cardiovascular complications from white-coat hypertension. Some but not all studies show lower cardiovascular event rates for patients with white-coat hypertension compared with those with sustained hypertension (strength of recommendation [SOR]: **B**, cohort studies with conflicting results and methodological problems).

Little information is available about the use of antihypertensive medication for white-coat hypertension. In 1 small randomized trial, the difference in stroke incidence and cardiovascular complications between active treatment and placebo did not reach statistical significance (SOR: **B**, based on an underpowered randomized controlled trial). Some experts recommend that patients with white-coat hypertension should be evaluated for evidence of target organ injury and monitored for the development of sustained hypertension (SOR: **C**, expert opinion).

■ EVIDENCE SUMMARY

A prospective cohort study compared cardiovascular events among patients with white-coat hypertension vs those with sustained hypertension. The study evaluated 479 patients with persistently elevated clinic systolic blood pressures of 140 to 180 mm Hg. Using 24-hour intraarterial ambulatory blood pressure monitoring (ABPM), they found that 126 patients had ambulatory blood pressures below 140/90 mm Hg (white-coat hypertension) while 353 patients maintained pressures above 140/90 mm Hg (sustained hypertension). On average, white-coat hypertension patients were younger than sustained hypertension patients (44 vs 52 years) but were otherwise similar. Over the next 9 years, patients with white-coat hypertension had significantly fewer cardiovascular events than patients with sustained hypertension (**Table**).¹

Another prospective cohort study compared fatal and nonfatal cardiovascular event rates among patients who had white-coat hypertension, sustained hypertension, or were normotensive. Investigators performed 24-hour ABPM on 1187 patients who had clinic blood pressures over 140/90 on three visits. They found that 228 patients had white-coat hypertension, defined as mean ambulatory blood pressures below the 90th percentile

of a normotensive population, and 959 patients had sustained hypertension. They followed these patients, along with 205 normotensive controls, for a mean of 3.2 years. Cardiovascular event rates did not differ significantly between normotensive and white-coat hypertension patients ($P=.83$; see **Table**), but the difference in event-free survival between the sustained hypertension group and both the white-coat hypertension and normotensive groups was highly significant ($P=.002$).²

In contrast, a recent 10-year longitudinal study of 146 normotensive people, 76 people with white-coat hypertension, and 344 with sustained hypertension showed that cardiovascular event rates were similar for patients with white-coat and sustained hypertension, and were significantly higher than in the normotensive group ($P=.03$ overall, $P=.03$ between white-coat hypertension and normotension and $P=.01$ between sustained hypertension and normotension).³

One randomized trial evaluated outcomes of antihypertensive therapy for white-coat hypertension for patients aged >60 years. Ninety-nine patients with white-coat hypertension were identified on the basis of systolic blood pressure greater than 160 mm Hg in clinic and normal 24-hour ABPM and were randomized to either placebo or drug therapy. Active treatment did not significantly lower ambulatory blood pressure in white-coat hypertension, but it did reduce blood pressure measured in clinic. After a year, medication produced an absolute reduction in cardiovascular events of 8.6%, and in stroke of 4.2%. Neither result was statistically significant due to the small sample size.⁴

Cohort studies of patients with white-coat hypertension

Patients	Outcome	Total number of events			P value
		NT	WCH	SH	
479 patients, mean age of 64 ¹	Cardiovascular events	N/A	15 (11.9%)	83 (23.5%)	$P<.001$
1392 patients, mean age of 51 ²	Cardiovascular events	4 (1.9%)	3 (1.3%)	37 (5.3%)	WCH: NT vs $P=.83$
					WCH vs SH: $P<.0001$
566 patients, mean age of 48 ³	Cardiovascular events	10 (6.8%)	14 (18.4%)	56 (16.3%)	Overall $P=.03$
					NT vs WCH: $P=.03$
					NT vs SH:

					P=.01
NT, normotensive; WCH, white-coat hypertension; SH, sustained hypertension					

■ RECOMMENDATIONS FROM OTHERS

The American College of Cardiology and American Academy of Family Physicians have made no specific recommendations about white-coat hypertension. The Blood Pressure Monitoring Task Force V concluded that a significant number of white-coat hypertension patients become truly hypertensive over years of follow-up.⁵

Experts agree that patients with white-coat hypertension should be indefinitely monitored for the development of sustained hypertension.⁶ Treatment is not needed unless the patient has sustained hypertension, evidence of cardiovascular disease, or signs of target organ injury.^{7,8} Typically, expert opinion recommends confirming the diagnosis of white-coat hypertension with home blood pressure records or ambulatory blood pressure monitoring.

CLINICAL COMMENTARY:

White-coat hypertension represents one point along the continuum of hypertension

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Unfortunately, the best available clinical evidence provides an unfulfilling answer to the question posed by this Clinical Inquiry. It requires inductive reasoning and logic to derive a treatment plan from the evidence presented. Perhaps it is because the diagnosis of white-coat hypertension remains poorly defined and clinically elusive.

Nevertheless, application of the simple principle of “where there’s smoke, there’s fire” fits best here. Clinicians should be aware that white-coat hypertension represents one point along the continuum of hypertensive disease. When diagnosed, patients with white-coat hypertension should at a minimum be followed for associated morbidities and treated when systemic hypertension is identified.

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