Published in final edited form as:

Ann Intern Med. 2019 October 15; 171(8): 603–604. doi:10.7326/L19-0524.

Cardiovascular Events and Mortality in White Coat Hypertension

Jordana B. Cohen, MD, MSCE,

University of Pennsylvania; Philadelphia, Pennsylvania

Matthew G. Denker, MD, MSCE,

University of Pennsylvania; Philadelphia, Pennsylvania

Debbie L. Cohen, MD,

University of Pennsylvania; Philadelphia, Pennsylvania

Raymond R. Townsend, MD

University of Pennsylvania; Philadelphia, Pennsylvania

IN RESPONSE: We thank Dr. Zhang and colleagues for endorsing the overall conclusions of our meta-analysis. We agree that additional studies are needed to clarify whether there is, indeed, a lack of association between WCH and stroke. We also appreciate that Dr. Zhang and colleagues reinforce many of the points that we identified in our discussion. These include focusing on risk reduction rather than treating in-office BP measurements in patients with WCH and monitoring these patients using out-of-office measurements because of their high risk for transition to sustained hypertension. Of note, the Centers for Medicare & Medicaid Services announced in July 2019 that they would be expanding reimbursement for ambulatory BP monitoring to include treated and untreated WCH and masked hypertension (1). We hope that these changes will promote more widespread implementation of ambulatory BP monitoring in the community, including closer monitoring of patients with suspected WCH.

Dr. Zhang and colleagues raise concerns about our inclusion of Banegas and colleagues' study, but the sensitivity analyses in Supplement Table 6 of our meta-analysis show that the primary results were upheld even when this study was excluded (HR for cardiovascular events, 1.29 [CI, 1.06 to 1.61]). They also note that Banegas and colleagues' study and the PAMELA study only included fatal end points. However, even if we omit these 2 studies from the meta-analysis, the HR for cardiovascular events associated with WCH is again 1.29 (CI, 1.05 to 1.62). As for their concerns about differing definitions of WCH across studies, our sensitivity analyses in Supplement Table 5 of our meta-analysis show that the results were upheld among studies that used a daytime BP threshold of less than 135/85 mm Hg.

The 2 meta-analyses cited by Dr. Zhang and colleagues should be evaluated carefully. The first (2) preceded the publication of several high-quality studies in this field. The second (3) omitted several high-quality studies published before the literature search and included a study that characterized WCH by a difference between a BP measurement taken by a physician and a nurse in the same office visit, with no out-of-office BP monitoring

performed (4). The overarching, consistent conclusion across all of this literature is that out-of-office BP monitoring is critical in the long-term management of patients with WCH.

References

1. Centers for Medicare & Medicaid Services. National coverage determination for ambulatory blood pressure monitoring. 2019 Accessed at www.cms.gov/medicare-coverage-database/details/nca-decision-memo.aspx?NCAId=294 on 2 July 2019.
2. Pierdomenico SD, Cuccurullo F. Prognostic value of white-coat and masked hypertension diagnosed by ambulatory monitoring in initially untreated subjects: an updated meta analysis. *Am J Hypertens*. 2011;24:52–8. doi:10.1038/ajh.2010.203 [PubMed: 20847724]
3. Fujiwara T, Matsumoto C, Asayama K, et al. Are the cardiovascular outcomes of participants with white-coat hypertension poor compared to those of participants with normotension? A systemic review and meta-analysis. *Hypertens Res*. 2019;42:825–33. doi:10.1038/s41440-019-0254-2 [PubMed: 30971805]
4. Strandberg TE, Salomaa V. White coat effect, blood pressure and mortality in men: prospective cohort study. *Eur Heart J*. 2000;21:1714–8. [PubMed: 11032699]