Reply to Spence—White Coat Hypertension: What Does It Mean and What Should We Do Until We Are Sure?

We thank Dr. Spence for his thoughtful comments “Dilemmas in diagnosing and managing hypertension: in white coat hypertension benign”[1]. We are grateful for his support for our two major goals, which are the replacement of manual auscultatory BP measurement with electronic oscillometric measurement and the early identification of white coat hypertension.

We agree with Dr. Spence's concerns regarding masked hypertension. The issue of masked hypertension was not yet reviewed by our sub-committee. Also to be noted the point of entrée of this specific algorithm is having an office BP above 140/90 mmHg. However, a more detailed assessment of the masked hypertension literature is planned in the near future as mentioned in our conclusion. Dr. Spence’s comments on the topics of pseudohypertension, pseudonormotension and cuff artifact were interesting and illuminating. We should note that these topics were outside the scope of our review.

Dr. Spence’s main criticism of our recommendations is that WCH is not a benign condition and therefore patients with WCH should be treated as if they are hypertensive. As we wrote in our review and acknowledged by Dr. Spence, there is no evidence from randomized controlled trials to support the pharmacologic treatment of subject with WCH. As Dr. Spence points out, observational data are mixed; however, we would emphasize that most of the observational data indicate that the prognosis of white coat hypertension is similar to that of

normotension[2]. He concludes that, even though most studies have not demonstrated increased risk, we should treat white coat hypertensives with antihypertensive drugs to reduce their risk. He cites concerns related to therapeutic inertia (or perhaps in this case, more accurately, therapeutic nihilism) and contends that preventable events could be avoided if white coat hypertensives received drug therapy.

Debate and discussion of the recommendations is always welcomed; however, in this case we would respectfully disagree with Dr. Spence regarding the need for drug treatment in white coat hypertension. CHEP has taken the approach that WCH may not be entirely benign and recommends annual follow-up for individuals with elevated screening BP levels who are ultimately found to be normotensive outside the white-coat setting[3]. In the meantime, patients should receive health behaviour optimization counseling – which if followed could effectively prevent future BP increases[4]. Monitoring for progression to overt hypertension at yearly intervals mitigates risk because as long as patients are followed, antihypertensive drugs can be instituted at the appropriate time. This is what the current level of evidence supports.

While we understand Dr. Spence's concern that "aided and abetted by the media" patients and their providers might look for any reason NOT to take or prescribe medications, the 2015 CHEP recommendations call for an upper limit of <135 SBP or <85 DBP for both daytime ABPM average and for HBPM with

lower limits for the 24-hour and night-time averages, so there should not be a concern that “doctors and patients will take this recommendation as a reason to not treat hypertension when out-of-office blood pressures are below 140/90”. Provided these parameters are followed, several clinical and cost-benefit studies have shown there will be an improved outcome both clinically and economically.

Even if we accept the premise that white coat hypertension truly increases risk, the question we should then ask is ‘What is the degree of risk increase and does it warrant drug therapy?’ After all, antihypertensive drug treatment is not innocuous, both in terms of risks and costs. If we turn to the meta-analysis by Stergiou et al., which Dr. Spence cites as evidence to support antihypertensive drug treatment for white coat hypertension, we can calculate from Table 2 that the absolute risk increase for cardiovascular events in individuals with white coat hypertension (compared to those with normotension) over a median of 8.3 years was 4% (9.2%-5.2%)[5]. If we assume that antihypertensive drug therapy reduces events by 20% over this time period[6], then we will achieve an absolute risk reduction of 0.8% (4%*0.2). This translates into a number needed to treat (NNT) of 125 over 8.3 years or 1000 per year, assuming the risk reduction is constant over time. 125 patients would have to be treated over an 8.3 year period or 1000 patients in a 1 year period to prevent 1 event. Patients and physicians are unlikely to consider this very large NNT worthy of drug therapy[7].

CHEP is not alone in making these important recommendations. NICE in the UK did an extensive review in 2011 of the clinical evidence, along with a

comprehensive cost-benefit analysis, and concluded with a strong recommendation that all patients suspected of being hypertensive must be assessed further with ABPM before finalizing the diagnosis to identify patients with WCH so pharmacotherapy can be avoided. Other organizations have made similar recommendations [8-10]. We do not feel a recommendation to treat white coat hypertension is warranted at this time but we will continue to monitor the published evidence and reassess accordingly.

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