

COMMENTARY

White coat hypertension: how should it be diagnosed?

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White coat hypertension is a relatively new concept in clinical medicine, though the phenomenon has been recognized in various guises for many years? The nomenclature has been questioned recently, and isolated clinic or office hypertension has been proposed as a more fitting term.' Reasonable though this may be, the reality is that 'white coat hypertension' has, as the saying goes, 'caught on', both with the medical profession, and, more importantly, it has become part of everyday parlance with our patients in the hair salons, the pubs, and restaurants where a fashionable diagnosis possessing a catchy diagnostic label capable of invoking sympathetic conversation with the promise of enduring attention, but without unduly threatening its harbinger, is indispensable to after-dinner chatter. Let us agree therefore to set this bogie aside, and accept the term, white coat hypertension, whilst acknowledging its clinical imprecision.

The importance of the condition rests on a curious haemodynamic phenomenon, which has quite profound clinical relevance: patients-let us call them people, because they may not be ill-who appear to have hypertension when their blood pressure is measured by the traditional Riva-Rocci/Korotkoff method, have normal blood pressures when ambulatory techniques are used to record their blood pressures away from the medical environment.'

Manning and her colleagues make two observations on the condition in this issue of the *Journal of Human Hypertension*.⁴ First, white coat hypertension (even allowing for differences of definition and referral bias) is common, but, of course not normal (or we would all exhibit the phenomenon), being present in about a quarter of their referral population. Second, white coat hypertension may not be altogether benign, as some 9% of their subjects had echocardiographic evidence of increased left ventricular hypertrophy. It would seem, therefore, that though most patients with white coat hypertension are not in need of antihypertensive medication,

some may be at risk, albeit it considerably less so than patients with sustained hypertension.

So far so good. Both observations are largely in agreement with a growing literature on these aspects of white coat hypertension,“-' but now reason deserts the authors in their hour of need. Having made their case they go on to make two recommendations with far-reaching implications: first, that subjects with white coat hypertension should have echocardiography, and, second, that they should have their clinic blood pressure measured by the traditional technique every 6 months. Both proposals are seriously flawed, yet there are discernible, if unacceptable, influences at work.

Let us look firstly at the recommendation to perform echocardiography in patients with white coat hypertension. In practice, this could mean performing echocardiography in about 25% of all patients referred to a clinic expressing an interest in hypertension. This recommendation might be reasonable if echocardiography was an inexpensive investigation with good reproducibility, but the reality is that it is more expensive than ABPM, is dependent on observer acuity, is inaccessible to the majority of family physicians, and is unsatisfactory in some 20% of subjects.'

Manning and her colleagues then go on to commit a clinical oxymoron. Having shown with their data that the only way to diagnose white coat hypertension is by utilising ABPM, they then recommend that patients with white coat hypertension should be followed every 6 months by the practice nurse! What will this achieve except to return the 'patient' to the clutches of the original diagnostic genie, who if of similar mind or persona to the first, will, at best, ask for another ABPM, or if the gods are unkind, the 'subject' now turned 'patient' will in all likelihood be subjected to life-long drug therapy?

Yet the lack of logic in this approach is, as I have said, understandable. The authors anticipating the inevitable protest that will accompany the inescapable conclusion deriving from their data (and that of others), that if we wish to diagnose white coat hypertension, ABPM is the best way of doing so, have compromised, and in so doing have failed to

face reality. Why then this fear to confront the evidence with logical reasoning? The Luddites will shout from the turrets that the evidence is not to hand proving that ABPM is superior to conventional measurement in predicting outcome (a nonsense as the recent Syst-Eur data shows"), but diagnosing people with white coat hypertension is a clinical rather than an epidemiological issue, and it should be seen as such and nothing more. We use ABPM to find those people with elevated conventional blood pressure, in whom blood pressure elevation is sustained when 'they are removed from the pressor effect of the medical environment, and this has nothing to do with outcome; it is simply good clinical practice.

Having disposed of this distraction, we must next face the fiscal argument, which claims that indiscriminate use of ABPM would place an intolerable burden on health care services. Studies on the economics of ABPM are few, and the fear of inappropriate use, especially in private practice, has had a negative influence.¹⁰ The most expensive part of any ABPM service is the cost of having a physician report on the generated data: in our unit, we have dispensed with the physician-rather our DABL computer program generates a report instead.¹¹ By so doing, we have reduced the cost of a 24-h ABPM to £30, a price at which we can reassure our health care masters that, even allowing for some overuse of the technique (will it ever be otherwise even with vastly more expensive investigations?), the benefits of accurate diagnosis, and the savings in drug prescribing will far offset the cost of providing a diagnostic technique that should be available wherever and whenever the diagnosis of 'hypertension' is contemplated.

References

- 1 Ayman D, Goldshine AD. Blood pressure determination by patients with essential hypertension. *Am J Med Sci* 1940; 200: 465-474.
- 2 Mancia G, Zanchetti A. White-coat hypertension: misnomers, misconceptions and misunderstandings. What should we do next? *J Hypertens* 1998; 14: 1049-1052.
- 3 Pickering TG *et al*. How common is white coat hypertension? *JAMA* 1988; 259: 225-228.
- 4 Manning G, Rushton L, Millar-Craig MW. Clinical implications of white coat hypertension: an ambulatory blood pressure monitoring study. *J Hum Hypertens* 1999; 13: 817-822.
- 5 Owens P, Atkins N, O'Brien E. The diagnosis of white coat hypertension by ambulatory blood pressure measurement. *Hypertension* 1998; 34: 267-272.
- 6 Owens P, Lyons S, O'Brien E. Ambulatory blood pressure in the hypertensive population: patterns and prevalence of hypertensive sub-forms. *J Hypertens* 1998; 16: 1735-1743.
- 7 Owens P, Lyons S, Rodriguez S, O'Brien E. Is elevation of clinic blood pressure in patients with white coat hypertension who have normal ambulatory blood pressure associated with target organ damage? *J Hum Hypertens* 1998; 12: 743-748.
- 8 Devereux RB, Pini R, Aurigemma GP, Roman MJ. Measurement of left ventricular mass: methodology and expertise. *J Hypertens* 1997; 15: 801-809.
- 9 Staessen J *et al*. Predicting cardiovascular risk using conventional vs ambulatory blood pressure in older patients with systolic hypertension. *JAMA* 1999; 282: 539-546.
- 10 Myers GM. Ambulatory blood pressure monitoring in treated hypertensive patients-implications for clinical practice. *J Hum Hypertens* 1996; 10 (Suppl 2): S27-S31.
- 11 Atkins N, Mee F, O'Brien E. A customised international database system for storing and analysing ambulatory blood pressure measurements and related data. (Abstract) *J Hypertens* 1994; 12: S23.