Importance of ambulatory blood pressure in hypertension management

Ambulatory monitoring is critical in accurately assessing blood pressure to calculate absolute cardiovascular risk

Geoffrey A Head
BSc, PhD,
NHMRC Principal Research Fellow[1]

Barry P McGrath
MB BS, MD, FRACP,
Professor of Medicine[2]

Mark R Nelson
MB BS(Hons), PhD, FRACP,
Professor and Chair of General Practice, and Senior Professorial Fellow,
Menzies Research Institute[3]

Michael Stowasser
MB BS, MD, FRACP,
Director,
Hypertension Unit[4]

1 Department of Neuropharmacology, Baker IDI Heart and Diabetes Institute, Melbourne, VIC.

2 Monash University and Southern Health, Melbourne, VIC.

3 University of Tasmania, Hobart, TAS.

4 School of Medicine, University of Queensland, Brisbane, QLD.

geoff.head@baker.edu.au

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Recently, there has been debate about the need for ambulatory blood pressure monitoring (ABPM) in clinical decision making, promoting instead the use of an absolute cardiovascular disease (CVD) risk-based approach.[1] While we fully endorse hypertension management based on absolute risk, inherent in this assessment is the accurate measurement of blood pressure (BP). The available data suggest this can best be achieved by ABPM. Following an exhaustive literature analysis, the new British National Institute for Health and Clinical Excellence guidelines for hypertension[2] have recommended that all suspected hypertensive patients require ABPM.[3] An issue in Australia is whether there is financial justification for routine use of ABPM for such diagnostic purposes. Evidence strongly supports ABPM as more cost-effective than the repeated clinic measurements required to establish a patient's true BP.[4]

There are important differences between population-based and clinical approaches to lowering BP. A reduction in salt in manufactured foods will have profound BP-lowering effects on a population but little impact at an individual level. While the decision to treat an individual is best reached through an absolute CVD risk-based approach, clinicians intervene at the level of individual risk factors. Therapy is directed at those risk factors that are considered most significant, with the aim of treating to target and, therefore, "normalising" risk. To do this, clinicians need to be able to assess response to therapy. Further, extensive research using ABPM indicates that clinic BP measurements are invalid in about 30% of the population.[3] In such cases, ABPM is required for the individual patient and for the physician making therapeutic decisions. For these reasons, the National Institute for Health and Clinical Excellence recommended extensive use of ABPM.[3]

While traditional management of elevated BP has relied on clinic assessment, there is now a strong body of evidence to show that measurement of BP outside the clinic by ABPM provides a more robust assessment of a patient's actual BP throughout the day and night.[3] Importantly, ABPM is a stronger predictor of clinical outcomes (such as myocardial infarction and stroke) than conventional clinic BP measurements.[5] ABPM is also the only method to detect a lack of nocturnal dipping, which is associated with increased risk of stroke, end-organ damage and cardiovascular events including death,[5] and may also influence the choice of antihypertensive therapy. ABPM gives measures of BP variability, which is a major independent contributor to risk.[6]

ABPM has an important place in defining abnormal patterns of BP, particularly white coat, masked, episodic and morning hypertension. While white coat hypertension carries minimal actual CVD risk, the absolute risk will be overestimated if it is based on the higher clinic readings. Definition of this disorder is important, not just in relation to management at the time of diagnosis, but also because it is a potential marker of future sustained elevated BP and future diabetes.[7] Masked hypertension can alert the practitioner to look for the presence of end-organ damage, which is important for identifying higher absolute CVD risk.

ABPM in conjunction with regular home measurement helps to engage the patient in managing their health by demonstrating the potential benefits from lifestyle changes (less salt, reduced stress, more activity) and by encouraging treatment compliance.

To suggest that there is no need for ABPM[1] is of great concern, as it ignores the benefits that have been amply demonstrated by research. Further, it undermines the call for better BP measurement, which is desirable in view of low patient awareness, poor patient compliance and clinical inertia for BP treatment in Australia.[8]

Recent developments now make it possible to include ABPM into guidelines for absolute CVD risk management, with the publication of ABPM equivalents for clinic BP measurements for definitions of hypertension and threshold targets for BP.[9] These ABPM equivalents have been included in the National Heart Foundation and the High Blood Pressure Research Council of Australia consensus statement on ABPM, which advocates wider use of ABPM for the assessment and management of BP and cardiovascular risk.[3] A practical guide for general practitioners has also been provided.[10]

We therefore encourage the use of ABPM to best define BP and to enable better absolute CVD risk estimation, as well as more informed clinical decision making. ABPM is further recommended for assessment of suspected masked or white coat hypertension, in combination with home and clinic assessments.

Competing interests: Barry McGrath has participated in trials of new pharmaceutical agents, sponsored by Bristol-Myers Squibb, Johnson and Johnson Pharmaceutical Research and Development USA, Novartis Pharmaceuticals Australia, Pfizer Australia and Servier International. He has recently served or is serving on advisory boards for Abbott Australia, AstraZeneca Australia, Boehringer Ingelheim Australia and Solvay Pharmaceuticals. He has received conference travel support from Boehringer Ingelheim Australia. Mark Nelson has participated in trials that have received funding from SmithKline Beecham, AstraZeneca, Bayer, Sanofi-Aventis, Merck Sharpe and Dohme, Pfizer, Servier Laboratories and Bristol-Myers Squibb. He has served on advisory boards for Sanofi-Aventis, Novartis, Schering-Plough and Solvay Pharmaceuticals, and has prepared educational material for Servier Laboratories, AstraZeneca and Bristol-Myers Squibb. He has also received conference and travel support from Bayer HealthCare AG, Merck Sharpe and Dohme, Novartis and Sanofi-Aventis.

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