

# How useful is self monitoring of BP?

**The role of SBPM is to provide supplementary information, enabling a more precise diagnosis and more accurate titration of treatment in the long term follow up of hypertension, writes Prof Eoin O'Brien**



With the impending demise of conventional blood pressure measurement using the mercury sphygmomanometer and stethoscope<sup>1</sup> and increasing reliance on profiles of blood pressure measurement,<sup>2</sup> an astounding array of automated devices for self-measurement of blood pressure have become available.

However, the role of self-blood pressure measurement (SBPM) should not be accepted uncritically, and it is timely that the Working Group on Blood Pressure Monitoring of the European Society of Hypertension has reappraised the role of the technique in clinical practice in a recent editorial in the *British Medical Journal*.<sup>3</sup>

The traditional technique of blood pressure measurement in the clinic, once regarded as the

cornerstone of decision making in hypertension, is now known to be unrepresentative of a patient's true blood pressure because of random fluctuations and the white coat effect.<sup>2,4-7</sup>

In addition, doctors rarely measure blood pressure according to recommended standards.<sup>2,3</sup> Aimed at improving hypertension management, the 2003 US Joint National Committee recommends the use of SBPM before considering the more expensive, but better validated technique of ambulatory blood pressure measurement (ABPM).<sup>4</sup>

Both the Joint National Committee and the 2003 guidelines from the European Society of Hypertension and the European Society of Cardiology suggest that SBPM might also be used as

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an alternative to ABPM for the diagnosis of white coat hypertension.<sup>4,5</sup>

The 2004 British Hypertension Society guidelines also acknowledge the increasing use of self monitoring in clinical practice and provide a threshold level for the diagnosis of hypertension (more than 135/85 mm Hg).<sup>6</sup>

Cross sectional data and one outcome trial have shown that, as with ABPM, SBPM values are lower than clinic blood pressure measurements.<sup>7-8</sup>

SBPM has several advantages over clinic measurements, by allowing multiple readings averaged over time and by taking measurements in people's usual environment, a more reproducible blood pressure value is produced that is devoid of the white coat and placebo effects.

More importantly, two outcome studies have shown that SBPM predicts cardiovascular outcome better than clinic measurements.

Preliminary evidence also shows that SBPM may improve control of blood pressure by improving compliance, as patients become more involved in their care.

It has also been suggested that SBPM might reduce healthcare costs by reducing the number of clinic visits.<sup>3</sup>

Most SBPM devices are self-activated, and misreporting of blood pressure readings is possible. Recently, the use of memory equipped devices has reduced such error, which can also be avoided by adopting telemedicine techniques, which lead to further improvement in controlling blood pressure.<sup>3</sup>

Although the technique is easy to learn, some patients may not be good candidates for self monitoring, which may result in anxiety or modification of treatment by the patient.

One of the major difficulties with SBPM (and other methods of blood pressure measurement) is determining the accuracy of the devices available.

Only devices that have been independently validated should be used, but it is often difficult to obtain information on this aspect of blood pressure measurement.

Recently a website had been launched to provide this information, and this site ([www.dableducational.org](http://www.dableducational.org)), which receives in excess of 180,000 visits per month, is revised every quarter and it provides a comprehensive bibliography of papers relating to blood pressure measurement devices.

An important potential application of SBPM is detection of white coat hypertension,<sup>9-10</sup> but though at first sight SBPM may seem an attractive and cheaper alternative method for detecting this condition, the evidence suggest that it cannot replace ABPM. It does, however, have a role as a screening test that requires confirmation with ABPM.<sup>3</sup>

SBPM is also more appropriate than ABPM for the long-term follow up of treated patients because of its lower cost and greater convenience for repeated measurements.

However, ABPM is regarded to be superior to SBPM because it allows for measurements over a full 24 hour period and has better outcome data to support its use.<sup>3,7</sup>

The BMJ editorial concludes that given the fallibility of conventional blood pressure measurement, the role of SBPM is to provide supplementary information to practising doctors enabling a more precise diagnosis and more accurate titration of treatment in the long term follow up of hypertension.<sup>3</sup>

To this might be added a perspective that places ABPM as the gold standard of blood pressure measurement, with SBPM intermediate between ABPM and clinic blood pressure measurement, the role of which should be recognised as being an inaccurate and often misleading screening measurement. ■

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References on request