

On the go

Ambulatory blood pressure monitors are an indispensable tool in managing hypertension.

Ambulatory blood pressure measurement (ABPM) has been increasingly used in clinical practice in the last 25 years. In recognition of the importance of ABPM, the British Hypertension Society¹ and the European Society of Hypertension² have both published guidelines for its use and interpretation in clinical practice.

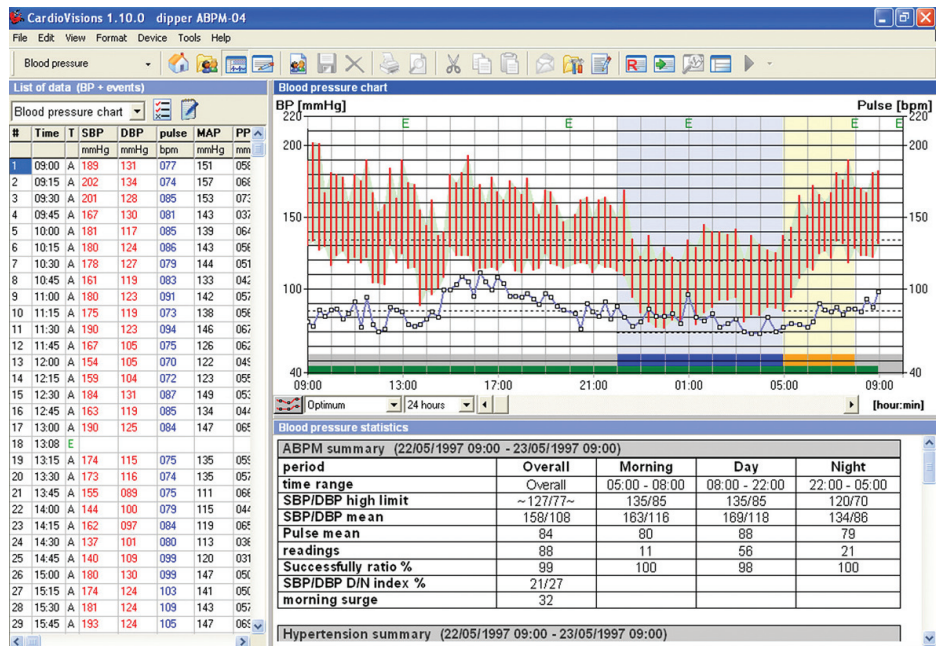
Worn over a 24-hour continuous period and typically recording every 30 minutes during the day and 60 minutes at night, an ABPM monitor provides more information on patients' true

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blood pressure while they carry out their normal daily activities than either at-home or in-clinic measurements. The software report generated typically produces mean summaries of daytime and night-time blood pressures with trend graphs and hypertension load statistics.

'White coat effect'

Traditionally, hypertensive patients have



• The software report produces mean summaries of daytime and night-time blood pressures.

been assessed using surgery-based blood pressure readings taken by a nurse or doctor. It has been suggested that this 'snapshot' approach to blood pressure measurement can give rise to inconsistencies and overestimate a patient's blood pressure by anything up

to 30mmHg due to what is known as 'white coat effect'.³ This condition, which can affect up to 20 per cent of the adult population, is characterised by an individual's repeated surgery-based readings being significantly higher than those



ABPM-05



ABPM-04

Which patients can benefit from ambulatory blood pressure monitoring?

- Borderline/high blood pressure
- White coat hypertensives
- Resistant hypertensives
- Elderly patients who may be hypertensive
- Pregnant women
- Diabetic patients
- Patients switching medication
- Non night-time dippers

● ABPM is particularly indicated for certain patients.

☉ measured outside the surgery. This rise can be caused by stress, anxiety or the anticipation of a measurement. The importance of the phenomenon is that patients diagnosed as having severe hypertension by a surgery reading alone may only be moderately hypertensive, or not even hypertensive at all.

The inconsistencies caused by white coat effect have a profound clinical and financial relevance to primary care and can lead to inappropriate diagnosis and treatment, especially if a patient's surgery blood pressure measurement is on the treatment threshold. It has also been suggested that, although surgery BP should be used as a reference, the

use of ambulatory BP may improve the prediction of cardiovascular risk in untreated and treated patients.

Setting up an ABPM service

A number of ambulatory blood pressure monitors are available and several factors will influence a practice's purchasing decision. By far the most important is whether the monitor has been independently validated to either the British Hypertension Society revised protocol (1993) or the International Protocol of the European Society for Hypertension. The British Hypertension Society website is a good starting point for this information (www.bhsoc.org).

The cost of ABPM monitors has fallen considerably in recent years but purchasers should check that there are no hidden extras and that the supplier is able to offer free technical support and advice to nurses who generally fit the monitor. A few combined ABPM/ECG monitors are available with additional 24-hour ECG reporting facilities and these can also be useful in assessing cardiovascular risk.

The more modern 24-hour monitors now use PC-based software and in some instances it is possible to attach the patient's report to popular clinical management systems, such as EMIS and Torex. A report should include,

as a minimum, daytime and night-time averages, a list of BP data and trend graph. Normal mean levels for ABPM in adults are slightly lower than surgery readings at 135/85 for daytime average and 120/70 when asleep. The results can usually be interpreted by suitably qualified clinicians, but there are additional software programmes compatible with certain monitors that can also interpret the results automatically. Ideally, the monitor should run on, and be supplied with, rechargeable batteries to minimise costs. An adult and large adult cuff and clear instructions for use should also be provided. Most companies will offer additional training if required. As with any piece of medical equipment used in patient diagnosis, routine calibration and servicing is important. With any ABPM this should be available in the UK from the supplier to avoid unnecessary downtime.

The introduction of 24-hour monitoring in general practice is gaining pace and there are sound clinical and financial reasons why this should continue. Its use should be encouraged since most anti-hypertensive prescribing decisions are made in the GP surgery and it could significantly reduce prescribing costs. Today's ABPM monitors are small, reliable, easy to use, comfortable to wear and are an indispensable tool in the management of hypertension. ■

What does ABPM do?

- Identifies patients with white coat hypertension and masked hypertension
- Reduces drug prescribing
- Helps decision-making for insurance proposals
- Helps decision-making for employers
- Shows efficacy of treatment
- Increases efficient prescribing of drugs
- Decreases prescribing of drugs
- Identifies patients with nocturnal hypertension at high risk of stroke
- Predicts outcome more accurately than other blood pressure measurements

● The advantages of ABPM are many.

References:

1. See www.bhsoc.org
2. 2007 Guidelines for the management of Arterial Hypertension, www.eshonline.org
3. *Journal of Hypertension* 2003 vol 21 No 5.

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