Ignoring the evidence

Despite recent advancements, Prof Eoin O’Brien examines the distance yet to travel in terms of managing high blood pressure

CONFIDER the following statement in 1896, the Italian physiologist Riva-Rocci introduced the technique for measuring systolic blood pressure using an occluding arm cuff and a mercury manometer: A decade later, Nicolai Korotkoff modified the technique so as to be able to measure diastolic as well as systolic blood pressure using a stethoscope to auscultate the sounds that now bear his name.

Considering a steady flow of articles in the literature, along with a paper by von Reckinghausen as early as 1901, demonstrating the accuracy of the method, it remains the method of choice for measuring blood pressure in clinical practice 110 years later. Quite apart from its inherent accuracy, blood pressure measurement does not identify white coat hypertension (individuals with elevated blood pressure in a clinical setting but not when measured outside of a clinical setting), and masked hypertension (individuals with normal office blood pressures and elevated daytime blood pressures) — each exhibiting clinical characteristics, and may each occur in some 15 per cent of the population. Is it not a salutary thought that hypertension is being identified in as many as one-third of all patients attending for routine blood pressure measurement? This is how the age of science deals with the deadliness of all risk factors — hypertension — the major cause of 10,000 strokes annually in Ireland.

None of this would matter much if we had no alternative for blood pressure measurement, but since 1896 and Korotkoff gave us the technique of so-called conventional measurement, we have landed on the moon, circled Mars, invented the motor car and aeroplane, and, most importantly, revolutionized the technology of science with the microchip?Will future investigations of medical scientists not look back at our persistence in using the inaccuracy of measurement techniques as being akin to diagnosis in days gone by? This forecast has been slow to materialize, but the evidence that ABPM is indispensable to good clinical practice has been growing steadily, and during the course of the development of instrumentation that can be derived from ABPM in 1979, and wrote then that the “development of a cheap and accurate means of ambulatory recording would have a considerable impact on the diagnosis of borderline hyper tension and the assessment of the efficacy of treatment”.

This is the reason why you might have received a call from your doctor’s office asking you to bring your home blood pressure monitor to your next appointment so that over a 24-hour period rather than giving a snapshot of blood pressure performed with an inaccurate technique under artificial circumstances so that the efficacy of antihypertensive medication over a 24-hour period becomes apparent, rather than relying on one or a few conventional measurements confined to a short period of the diurnal cycle: ABPM can now accept patients with abnormal patterns of nocturnal blood pressure behaviour, diurnal differences, extremities and reverse dippers, and the morning surge — all of which are associated with high risk; the technique can demonstrate a number of patterns of blood pressure behaviour relevant to clinical management — isolated systolic and isolated diastolic hypertension, post-prandial hypertension, autonomic failure, etc.

Finally and importantly, evidence is now available from longitudinal studies that ABPM is a more strong predictor of cardiovascular morbidity and mortality than conventional measurement. In other words, ABPM identifies patients with hypertension (and subjects whose blood pressure is normal) who are at risk from future cardiovascular events. Moreover, the evidence is growing that nocturnal blood pressure measured by ABPM may be the most sensitive predictor of cardiovascular outcome, from which it follows that the measurement of 24-hour time blood pressure should be an important part of clinical practice.

So the evidence is there and it clearly demonstrates that no individual in Ireland should be untreated or suboptimal without having ABPM, that those ultimately diagnosed as hypertensive with ABPM should be assessed at intervals with ABPM, and that those for whom treatment is prescribed should have regular ABPMs to ensure that adequate blood pressure control is being achieved over the 24-hour period.

If this were done, stroke could be reduced by at least 50 per cent, together with a significant reduction in other cardiovascular consequences of misdiagnosed or poorly controlled hypertension. Can we not do this over the next decade?

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Public Health Specialist Dr Joe Barry believes we can look back on several health gains when the whistle is blown on the special features