

● Hypertension

Where are our policymakers?

Dr Eamon Dolan of Connolly Hospital and **Prof Eoin O'Brien** of the Conway Institute examine the global burden of hypertension – the major cause of death and morbidity worldwide – and how best to address it

Richard Horton, the editor of *The Lancet*, and a massive team of 486 scientists from 302 institutions in 50 countries are to be congratulated on publishing 'The Global Burden of Disease Study 2010 (GBD 2010)' in a recent edition of the journal. Described by the editor as "an extraordinary collaboration" he goes on to add "our collective responsibility is to turn it into an extraordinary opportunity."

The special triple edition of *The Lancet*, which contains 16 articles and runs to 217 pages, covers all aspects of the diseases affecting mankind. For example, the importance of 67 risk factors and clusters of risk factors are compared globally for both sexes in 20 age groups in 187 countries in 21 regions of the world, over the past two decades.

High blood pressure – biggest global risk factor of all

Doctors and researchers will hone in, of course, on the disease or risk that impinges on their area of expertise and interest, which is what we are doing in examining hypertension in a global context.

However, we do so with some justification in that of all the diseases and risks that have been studied in GBD 2010, the biggest global risk factor for disease is high blood pressure (BP), whereas in 1990 the leading risk was childhood underweight. [See figure]

Physiological risks presented analytical challenges for computation of the aggregate burden because the effects of high body-mass index are partly mediated through high BP, high total cholesterol, and high fasting plasma glucose. There were considerable regional differences.

For example, the leading risk factor in most of Asia, North Africa and the Middle East, and central Europe was high BP, whereas in Eastern Europe, most of Latin America, and southern sub-Saharan Africa it was alcohol use.

New evidence for the level of risk for BP resulted in a revision of the theoretical-minimum-risk exposure distribution compared to the previous comparative risk assessment.

The previous distribution for systolic BP was a mean of 115 mm Hg but the evidence from recent randomised trials of BP-lowering medication showing that the benefits of lowering BP could continue to 110 mm Hg or lower influenced a change from of the theoretical-minimum risk exposure distribution to a mean of 110–115 mm Hg.

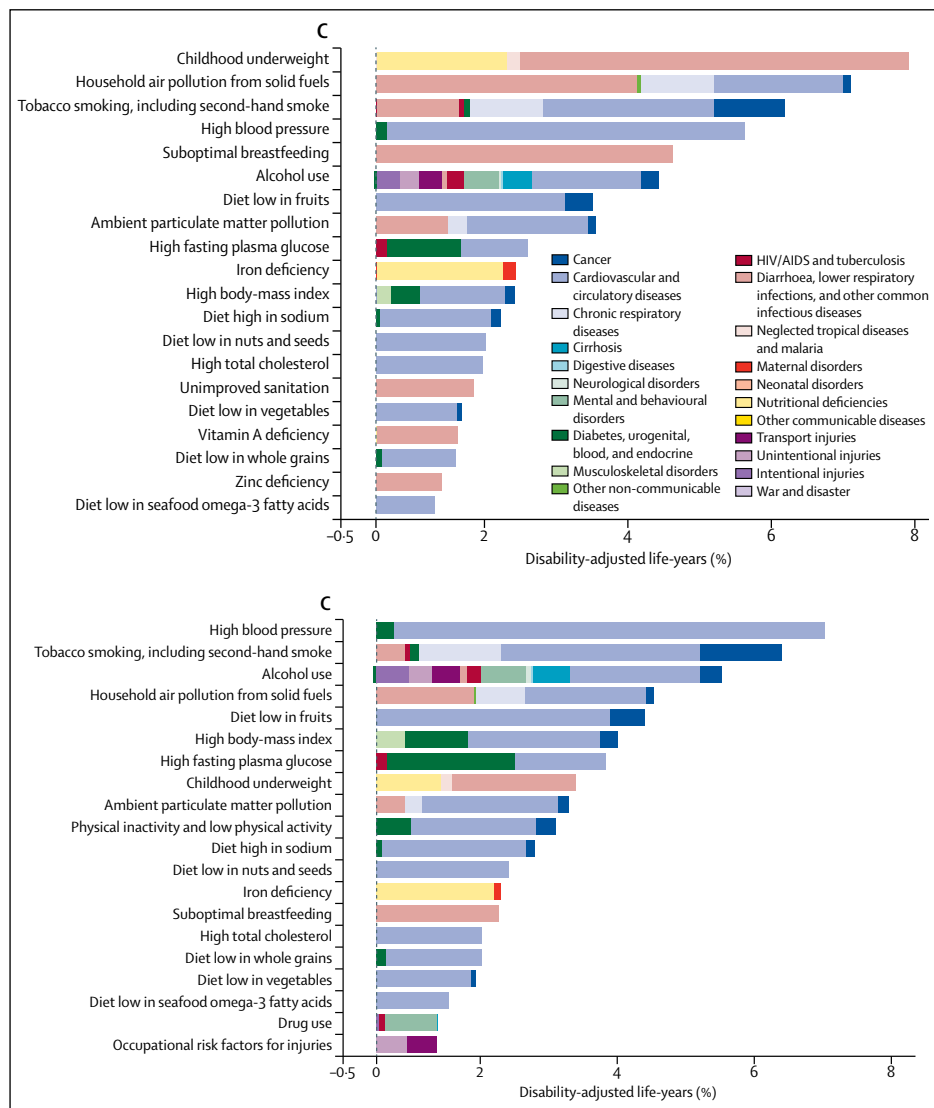


Figure: Burden of disease attributable to 20 leading risk factors expressed as a percentage of global disability-adjusted life-years for both sexes. [Upper panel 1990; lower panel 2010]. Modified from Lim SS and others. *Lancet* 2012; 380:2224–60.

The predominance of non-communicable disease risks in 2010 highlights the global epidemiological transition that has occurred since 1990. In that year, the leading risks were childhood underweight, household air pollution from solid fuels, and tobacco smoking including second-hand smoke, high BP, and suboptimal breast-feeding.

With the exception of household air pollution, which is a significant contributor to childhood lower respiratory tract infections, the five leading risk factors in 2010 (high BP, tobacco smoking including secondhand smoke, alcohol use, household air pollution, and diets low in fruits) are mainly causes of adult chronic disease, especially cardiovascular diseases and cancers.

Age and global risk

High BP, tobacco smoking including second-hand smoke, alcohol use, and diet low in fruits were all in the top five risk factors for adults aged 50–69 years and adults older than 70 years, in both 1990, and 2010, accounting for a large proportion of disease burden in both age groups. Globally, high BP accounted for more than 20 per cent of all health loss in adults

aged 70 years and older in 2010, and around 15 per cent in those aged 50–69 years.

Message for Ireland

Ireland compares well in the life expectancy ratings with male expectancy being 77.6 years and female expectancy 82.2 years in 2010, which compares favourably with European countries, the US, Australia and Japan, which has male and female life expectancies of 79.3 and 85.9 years respectively. But we must turn our attention away from life expectancy measured in crude years and concentrate on the quality of life during increased longevity.

With ischaemic heart disease, ischaemic, non-ischaemic and haemorrhagic stroke, hypertensive heart disease, atrial fibrillation and flutter, peripheral vascular disease, aortic aneurysm and chronic renal disease (to which we must now add cognitive impairment and dementia) all attributed to hypertension, and with nearly 1 million people in Ireland having high blood pressure, the inescapable message is that quite apart from the disability and suffering caused, the financial cost cannot be sustained into the future.

'Ireland was the first European country to show that ABPM could be used effectively in primary care to achieve better BP control in patients with hypertension'

When we consider, moreover, that we have drugs that effectively control BP but that only 30 per cent of patients have their BP adequately controlled and that if we achieved BP control some 50 per cent of the 10,000 strokes occurring annually in Ireland could be prevented (to say nothing of the other cardiovascular consequences of hypertension), we must ask ourselves why it is that the healthcare system does not take active measures to avert what is effectively a treatable epidemic.

The disgrace of BP control in Ireland

Despite knowing for at least two decades the importance of BP control in preventing stroke, and despite having more than enough drugs available to effectively treat hypertension, the 'rule of halves' is operating in most European countries: only half the people with hypertension are aware that their BP is raised; of those identified as having high BP, only half are on BP lowering treatment, only half are well controlled.

Until the publication of SLÁN 2007, we in Ireland basked in the misguided belief that we were at least as good as the rest of Europe, in other words the 'rule of halves' could be applied to the Irish population.

Unhappily, the situation is far worse! In the SLÁN 2007 Survey, 60 per cent of respondents had high BP, of whom 57 per cent were not on medication and of those on medication, 70 per cent were not controlled to levels below 140/90 mmHg. If we reflect on the fact that conventional BP measurement is inaccurate and misleading and that the level of 140/90 mmHg is now regarded as a liberal figure (130/80 mmHg being considered optimal), the real state of affairs is likely to be even worse.

How can BP control be achieved? There are two basic requirements for obtaining the elusive goal of BP control: accurate measurement of BP over 24-hours and adequate prescribing of BP lowering drugs so as to achieve normal BP during the day and night. The former objective can be achieved by the routine use of ambulatory blood pressure measurement (ABPM) and the latter by overcoming therapeutic inertia.

Ireland was the first European country to show that ABPM could be used effectively in primary care to achieve better BP control in patients with hypertension.

How can BP control be achieved?

The RAMBLER studies I and II showed that ABPM allowed patients with inadequate BP control to be identified and in some cases prevented from unnecessarily commencing on antihypertensive medication, and that BP control was improved in those managed with ABPM compared with conventional measurement.

This led the authors to conclude that 'ABPM appears to have a significant impact on decision-making of general practitioners and on the medical management of patients with hypertension in the community'.

Therapeutic inertia, which is now recognised as a major cause of poor BP control, may be defined as the failure to prescribe sufficient antihypertensive drugs to lower BP to normal levels. All doctors who deal with hypertension, be they specialists or GPs, are affected by therapeutic inertia and often for very plausible reasons.

First, there is reluctance to prescribe more tablets for patients who may resent having to take drugs for an illness that causes no symptoms or who cannot afford extra medication or who have developed adverse effects with drugs; secondly, ABPM has not been funded to enable its wider use to demonstrate the response to treatment and the efficacy (or otherwise) of medication over the 24-hour period; thirdly, the achievement of BP control in hypertensive patients is not viewed as an urgent necessity and poor BP control is permitted, whereas the reality is that the sooner BP control is achieved the sooner cardiovascular complications are prevented.

Some of these difficulties have been alleviated in Ireland. ABPM is becoming increasingly available in primary care, often with the support of the pharmaceutical industry. It is surely time for the HSE to recognise the need for reimbursement of this technique in primary care. It is important to emphasise that ABPM is dependent on using a system that can provide not only a plot and statistical analysis but also an interpretative and trend report along with the facility to transmit and store data centrally. The increasing availability of ABPM in many pharmacies will allow hypertensive patients to participate in achieving control of their own blood pressures.

In conclusion, we need to be innovative if we hope to reverse the tide of cardiovascular disease that is directly attributable to poorly controlled hypertension. We must dispel the present ambivalent attitude to the management of hypertension by overcoming therapeutic inertia so as to obtain control of BP, and to document that we are doing so by using ABPM and central data collection to provide a registry of blood pressure.

High blood pressure has now been shown definitively in GBD 2010 to be the leading risk factor for the debilitating cardiovascular consequences of hypertension worldwide, and in the words of the report the "large burden of high blood pressure emphasises the importance of implementing both population-wide and high-risk approaches to reduction of blood pressure".

Where are the policy makers in Ireland?

References on request.

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