Hypertension: now is the time for action

Nasheeta Peer, Senior Scientist in the Chronic Diseases of Lifestyle unit at the Medical Research Council. Research areas of interest: diabetes, hypertension, dyslipidaemia, obesity and smoking. nasheeta.peer@mrc.ac.za

Hypertension, defined as blood pressure (BP) ≥140/90 mmHg or the use of antihypertensive medication, has gained global importance and is recognised as a key contributor to the present pandemic of cardiovascular disease (CVD) (1). In Sub-Saharan Africa (SSA), despite the high burden imposed by communicable diseases such as HIV/AIDS, tuberculosis and malaria, hypertension has emerged as a significant medical and public health problem and is regarded as one of the continent's greatest health challenges after HIV/AIDS. In South Africa, hypertension is the single most prevalent CVD risk factor and the predominant contributor to CVD morbidity and mortality (2).

Prevalence and predisposing factors

Hypertension has reached pandemic levels with the World Health Organization (WHO) dedicating the 2013 World Health Day to hypertension. Almost one billion individuals globally had hypertension in 2008, the majority of whom resided in developing countries. Compared to the worldwide hypertension prevalence of about 40% in ≥25-year-old adults, SSA had the highest rate at 46% (3); a far cry from the early 20th century when hypertension was rare in the region. In South Africa, the national survey of 1998 reported hypertension rates of 22.9% and 24.6% in ≥15-year-old men and women, respectively (4). These have probably increased due to a rise in the predisposing factors but recent data on the national prevalence of hypertension are, unfortunately, lacking.

The development of hypertension is a complex combination of genetic and environmental influences. The key risk factors for essential hypertension, also referred to as primary or idiopathic hypertension are excess body fat, a salt-rich diet with processed and fatty foods, a low consumption of fruit and vegetables (that is, low potassium intake), physical inactivity, excessive alcohol consumption and psychosocial stress (5, 6).

Mortality

High BP was the foremost cause of death worldwide in 2008 responsible for 13-14% of global mortality or about 7.5 million deaths (5). Approximately half the risk for stroke and heart attack deaths is attributable to high systolic BP. In addition, the other serious and life-threatening consequences of high BP include heart failure and chronic renal failure.

The number of deaths attributable to high BP was higher in low- (2.0 million) and middle-income (4.2 million) compared to high-income countries (1.4 million) (5), highlighting the higher burden in poorer regions. Furthermore, the profound effect of hypertension on populations in low- to middle-income countries is exacerbated by a greater proportion of the burden occurring in younger individuals in these regions. At any given age, the risk of dying from high BP was more than double in low- and middle-income countries compared to high-income countries. The mortality

attributable to hypertension in under 60-year-old individuals was 25% in SSA compared to only 7% in high-income countries (5). In South Africa too, a significant proportion of mortality attributable to high BP occurred in those <60 years of age (2).

In 2000, after sexually transmitted diseases, high BP was the second leading risk factor contributing to mortality in South Africa. Almost 47 000 deaths or 9% of total mortality was attributable to high BP indicating the substantial impact of this disease burden on the local population. Approximately 50% of stroke and 42% of heart attacks in ≥30-year-old adults was on account of high BP (2).

Management of hypertension

Notwithstanding the high prevalence of hypertension and the gravity of the related complications, significant numbers of hypertensive individuals, particularly in SSA and other developing regions, are unaware of their condition and in those diagnosed treatment is often inadequate. The levels of hypertension awareness, treatment and control in most developing countries tend to be lower than those reported in economically developed countries with approximately one-quarter to one-half of hypertensive individuals aware of their diagnosis, 10-50% receiving treatment, and 20-50% of treated individuals being controlled (7).

In South Africa, the national prevalence of hypertension awareness, treatment and control among hypertensive individuals in 1998 was 26.0%, 21.2% and 9.9% in men and 51.0%, 36.5% and 17.9% in women, respectively (4). There is a wide gap between the potential to control BP and the actual achievement of control, despite the availability of effective medication (2). Barriers to optimal hypertension management include the healthcare service, the healthcare provider and the patient, indicating that a multilevel approach is required to improve the outcome (6).

The lower mortality burden attributable to high BP in high-income countries is likely related to their better hypertension management compared to poorer regions. Antihypertensive therapy when optimally prescribed is among the most efficient means for disease prevention with lowered BP associated with a marked reduction in CVD morbidity and mortality related to stroke, heart attack and heart failure, as well as chronic kidney disease (3). The early detection, treatment and control of hypertension are therefore central to the management of CVD risk.

Lifestyle modification strategies

Along with pharmacological interventions, and irrespective of the level of hypertension, BP reduction by non-pharmacological means is equally important and always preferable. Interventions that have proven effective include weight loss, modification of eating habits with increased fruit and vegetable and decreased saturated and total fat intake, reductions in salt and alcohol consumption, and increases in physical activity (1,6,7).

However, adherence to such lifestyle interventions is known to be extremely poor. Lifestyle modifications are likely to be more sustainable when instituted in supportive environments (8) that are conducive to the uptake of healthier lifestyles in terms of easy access to cheaper healthier food options and safe convenient spaces for

exercising. The current environment in South Africa makes it difficult to live healthier lifestyles, particularly for the poor majority who are restricted in their choices by the lack of availability of healthy foods in the poorer sector of society, limited knowledge and finances. Motivated stakeholders in other government departments, beyond the healthcare sector, are required to develop comprehensive national and local interventions that utilise every opportunity to encourage and promote active living, healthy eating, and energy balance (9).

Another important population-based approach targeting diet is a reduction in salt intake, a key contributor to raised BP. In South Africa, salt ingestion at approximately 8.1 grams/day exceeds the recommended maximum 4-6 grams/day with almost 50% of intake from non-discretionary sources. The single greatest contributor to non-discretionary salt intake in South Africa is bread which comprises 25-40% of dietary sodium intake (10). In line with WHO recommendations that governments implement policies regarding food labelling, legislation and product reformulation, South Africa has recently introduced legislation regulating sodium in certain foods, including bread and cereals, among others. Such an initiative will have a significant impact on BP levels as the black population has been found to be particularly salt-sensitive. Reducing salt intake to achieve the WHO recommended salt consumption target of <5grams/day is one of the most cost-effective strategies to combat the epidemic of hypertension and CVD and to improve population health in South Africa (10). Potentially, 8% of strokes, 6.5% of heart attacks and 11% of hypertensive heart disease could be prevented. In addition to major beneficial effects on health, there will also be significant cost savings such as reduced healthcare costs, among others. Direct healthcare cost savings from a decline in stroke incidence would amount to an estimated R300 million annually (10). In resource-constrained settings like South Africa, investment in prevention strategies are likely to yield the greatest benefit (1) and should be a public health priority.

Policymakers need to introduce legislative measures that create a congenial environment and facilitate the adoption of healthy lifestyles (8). Such strategies will contribute to lower BP levels in the whole population as well as reduce the hypertension prevalence.

In, conclusion, hypertension is a major public health challenge worldwide and in South Africa, and an acknowledgement of the global nature of the problem is needed to effect optimal management via both pharmacological and non-pharmacological interventions (7). Considering that effective medication makes hypertension one of the most modifiable CVD risk factors and that optimal management can significantly reduce the risk of complications and decrease the associated social and medical costs (2), it is imperative to improve hypertensive care. In addition to the current suboptimal pharmacological management, this silent epidemic is not matched with comparable levels of awareness among policymakers or the general population. Optimal management comprises not only adequate pharmacological therapy but, equally important, non-pharmacological interventions with healthier diets and increased physical activity that need to be promoted through population-based approaches (7). The time for action is now.

Note that the views expressed in this article are those of the author(s) and do not necessarily represent the views of PHASA.

References:

1. Kearney PM, Whelton M, Reynolds K, Muntner P, Whelton PK, He J. Global burden of hypertension: analysis of worldwide data. Lancet. 2005;365(9455):217-23.
2. Norman R, Gaziano T, Laubscher R, Steyn K, Bradshaw D. Estimating the burden of disease attributable to high blood pressure in South Africa in 2000. S Afr Med J. 2007;97(8 Pt 2):692-8.
3. World Health Organization. Global status report on noncommunicable diseases 2010. Geneva: World Health Org; 2011.
4. Department of Health. South Africa Demographic and Health Survey 1998: Full Report. Pretoria: 1999.
5. World Health Organization. Global health risks: mortality and burden of disease attributable to selected major risks. Geneva: World Health Organization; 2009.
6. Summary of the 2007 European Society of Hypertension (ESH) and European Society of Cardiology (ESC) guidelines for the management of arterial hypertension. Vascular health and risk management. 2007;3(6):783-95.
7. Kearney PM, Whelton M, Reynolds K, Whelton PK, He J. Worldwide prevalence of hypertension: a systematic review. Journal of hypertension. 2004;22(1):11-9.
8. Mensah GA. Epidemiology of stroke and high blood pressure in Africa. Heart. 2008;94(6):697-705.
9. Joubert J, Norman R, Bradshaw D, Goedecke JH, Steyn NP, Puoane T. Estimating the burden of disease attributable to excess body weight in South Africa in 2000. S Afr Med J. 2007;97(8 Pt 2):683-90.
10. Bertram MY, Steyn K, Wentzel-Viljoen E, Tollman S, Hofman KJ. Reducing the sodium content of high-salt foods: effect on cardiovascular disease in South Africa. S Afr Med J. 2012;102(9):743-5.