Hypertension; East and West

Abstract

Hypertension is the number one public health burden accounting for most cardiovascular morbidity and mortality worldwide. While the more developed western countries have shown some success in combating hypertension, the same cannot be said for developing and newly developed countries in the East. The prevalence of hypertension is increasing in the East and coupled with low awareness, and poor blood pressure control on treatment, it will continue to pose substantial health demand in the East. Lessons needs to be learned from the West to combat this public health scourge.

Keywords: Hypertension; Awareness; Treatment; Control; East; West

Introduction

The Burden of Hypertension in the East and West

Hypertension is the most prevalent risk factor for mortality worldwide [1]. Cardiovascular (CV) disease, in particular myocardial infarction and cerebrovascular diseases consistently contribute to most morbidity and mortal events in most parts of the world. Many of these cardiovascular events are premature in nature, especially in the developing world [2]. These premature deaths of individuals who should be productive to society will in turn confer additional burden to many parts of the developing world which are facing socioeconomic challenges. A cohort study conducted in the Asia Pacific Region over the last two decades has thrown light into the burden of hypertension in particular on cardiovascular diseases in the region [3]. It has been estimated that in the Asia Pacific Region 66% of all CV events are attributable to hypertension per se [4]. Specifically, hypertension contributes to 40-50% of all hemorrhagic strokes, 30-40% of all ischemic strokes and 20-25% of all ischemic heart diseases in the region. These estimates were remarkably shown to be consistent with a recent Indonesian survey that demonstrated 20-25% of all coronary heart diseases and 35-42% of all strokes were attributable to hypertension [5]. It is also worth remembering that effective control of hypertension has been shown to be highly cost effective in the West [6] and more recently in the East [7]. What lessons can we learn thus far and what can be done to mitigate this worrying state of affair? This article will focus on hypertension because it is set to remain for decades to come as the main public health scourge in combatting premature morbidity and mortality especially in the East, the most populous part of the world.

Prevalence and awareness of hypertension

Most surveys over the last decade put the prevalence of hypertension at between 19-30% in the West [8] and 25-48% in the East [9-19]. Most published national surveys over the last decade has been from outside the West. Although one can be critical about findings from such surveys, in particular the different methodologies adopted, the general pattern observed cannot be ignored; hypertension is more prevalent in the East than in the West. There may be several possible reasons, but salt intake, population in epidemiological transition, and adoption of more unhealthy lifestyles may be the main contributing factors. Public health education or the lack of it may also contribute. What is also of concern is that secular trends showed an increase in prevalence in the East while the reverse is true for the West. Already, the World Health Organisation have predicted that close to 1.6 billion individuals worldwide will have elevated blood pressure by 2025 and the burden will continue to be in the East as what it is now. More is therefore needed to be invested in public surveillance and screening, particularly opportunistic screening at any chance encounter in Asia. The public must also be encouraged to check their blood pressures yearly especially if they have a strong family history of hypertension or pre mature CV diseases. Others to be encouraged are those with concomitant cardiovascular risk especially obesity, smoking, high salt intake, diabetes mellitus, hyperlipidemia and those with previous cardiovascular events some of which may be subclinical or not previously diagnosed. Studies within the Asia Pacific region have shown that countries which have shown a reduction in the prevalence of hypertension has corresponding reduction in CV mortality (South Korea, Singapore, Australia and New Zealand) while the reverse is true (Philippines, Pakistan, Myanmar, China) [20].

Awareness of hypertension also differed between East and West and within the Eastern population. In the West, at least two in three knew that their blood pressure are elevated (England 66%, Canada and the USA 83%) [8] while in the East, awareness is at best 64% (Korea) [11] and at worst Indonesia (37%) [19]. Bangladesh meanwhile defies the trend for Asian developing countries with a credible 50% awareness rate [18]. It has to be remembered that poor awareness has been shown to correspond to suboptimal control rates particularly in low income Asian countries [21]. It is therefore imperative that more proactive actions need to be taken in Asia to detect and educate the public on the dangers of undiagnosed hypertension.

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Treatment and control of Hypertension

Treatment rates of hypertension showed great disparity between the East and West and with the different socioeconomic status within Asian countries. In most Western countries, treatment rates are between 50 to 80% with England having the lowest and Canada the highest [8]. In the Asia Pacific region, the more affluent countries have a treatment rate of more than 50%. South Korea has a treatment rate of 55% [11], Malaysia 79% [13] and Singapore 84% [15] higher even than Canada [8]. This can partially be explained by the fact that Singapore is a small developed city-state and accessibility to health care services should not pose any problem. Of the more economically challenged countries in Asia, Indonesia achieved a treatment rate of 25% [5], followed by India (37%) [10] and Bangladesh (41%) [18]. China, the world’s most populous country and the second biggest economy only achieved a treatment rate of 22% [9]. This may be reflective of accessibility to health care facilities in a vast country.

Of all the data obtained from hypertension surveys, the one which is arguably the most reliable and most clinically relevant is that of control rates on treatment. These are data obtained from patients who are known to have been diagnosed as having hypertension and are on treatment at the time of the survey. Control rates is the West [8] is between 51% (England) to 80% (Canada) with USA at 71%. In the East, no country has managed to achieve a control rate of 50%. The best being South Korea (38%) [11], followed by Malaysia (35%) [13], Bangladesh (31%) [18] Singapore (27%) [15], and Indonesia (25) [19]. Unlike some well-known risk factors for CVD, there is no controversy with regards to the CV benefits of pharmacological treatment of hypertension.

The latest meta-analysis involving 44,899 patients randomized in 19 trials showed that a tighter control of blood pressure produced a significant reduction for CVA (22%), retinopathy progression (19%), CVD (14%), myocardial infarction (13%) and albuminuria (10%) [22]. This is further reaffirmed in a trial involving high-risk hypertensives on treatment where a tighter control (achieved (10%) [22]. This is further reaffirmed in a trial involving high-risk hypertensives on treatment where a tighter control (achieved (10%) [22]. This is further reaffirmed in a trial involving high-risk hypertensives on treatment where a tighter control (achieved (10%) [22]. This is further reaffirmed in a trial involving high-risk hypertensives on treatment where a tighter control (achieved (10%) [22]. This is further reaffirmed in a trial involving high-risk hypertensives on treatment where a tighter control (achieved (10%) [22]. This is further reaffirmed in a trial involving high-risk hypertensives on treatment where a tighter control (achieved (10%) [22]. This is further reaffirmed in a trial involving high-risk hypertensives on treatment where a tighter control (achieved (10%) [22]. This is further reaffirmed in a trial involving high-risk hypertensives on treatment where a tighter control (achieved (10%) [22]. This is further reaffirmed in a trial involving high-risk hypertensives on treatment where a tighter control (achieved (10%) [22]. This is further reaffirmed in a trial involving high-risk hypertensives on treatment where a tighter control (achieved (10%) [22]. This is further reaffirmed in a trial involving high-risk hypertensives on treatment where a tighter control (achieved (10%) [22]. This is further reaffirmed in a trial involving high-risk hypertensives on treatment where a tighter control (achieved (10%) [22]. This is further reaffirmed in a trial involving high-risk hypertensives on treatment where a tighter control (achieved (10%) [22]. This is further reaffirmed in a trial involving high-risk hypertensives on treatment where a tighter control (achieved (10%) [22]. This is further reaffirmed in a trial involving high-risk hypertensives on treatment where a tighter control (achieved (10%) [22]. This is further reaffirmed in a trial involving high-risk hypertensives on treatment where a tighter control (achieved (10%) [22]. This is further reaffirmed in a trial involving high-risk hypertensives on treatment where a tighter control (achieved (10%) [22]. This is further reaffirmed in a trial involving high-risk hypertensives on treatment where a tighter control (achie...


