

REVIEW

Review of Hypertension in sub-Saharan Africa

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ABSTRACT

Hypertension prevalence in sub-Saharan Africa is high and it is the main driver for cardiovascular diseases in the region. Cardiovascular diseases are associated with high morbidity and mortality worldwide. The enormous prevalence of hypertension in sub-Saharan Africa (SSA) can be attributed to rural-urban migration, high salt intake, smoking of tobacco and inadequate exercise. Awareness and control of hypertension is generally low with women having better control rates as compared to men. Untreated hypertension is associated with stroke, myocardial infarction and renal failure. The management of hypertension in the sub region is a major challenge due to financial constraints and inadequate resources. Hypertension is struggling to gain priority as a major health threat as infectious diseases like Acquired Immune Deficiency Syndrome (AIDS), tuberculosis (TB) and malaria are still predominant. Hypertension is largely preventable and can be easily controlled using evidence based practices such as regular exercises, decreasing salt intake, cessation of smoking and alcohol intake and the usage of antihypertensive.

Non-communicable diseases such as hypertension are rapidly overtaking communicable diseases in the sub-Saharan region and pose a major health threat. There is a need to prioritize cardiovascular diseases focusing on pragmatic prevention and control of hypertension in order to decrease the burden of the disease in the region.

BACKGROUND

Worldwide, hypertension is a leading risk factors for mortality estimates of 9.4 million and disease burden of 7% using DALYs in 2010 (1). Hypertension is the single prime risk factor driving the cardiovascular disease (CVD) epidemic in Africa (2) and its related events and deaths worldwide (1). Hypertension is defined as an average systolic blood pressure ≥ 140 mmHg and/or average diastolic blood pressure ≥ 90 mmHg) in adults aged 18 years. In 2014, 22% of the world's population were identified as having this condition (3). Across the WHO regions, Africa recorded the highest prevalence of raised blood pressure, at 30% for all adults combined (3).

Complications of untreated hypertension include stroke, myocardial infarction, cardiac failure, dementia, renal failure and blindness which worsen the financial and logistic burden of health systems (4,5). CVD is the leading cause of death in developing countries causing deaths comparable to those attributed to HIV, malaria and tuberculosis (6,7).

With the focus of the international community mainly on the fight against infectious diseases and maternal and child mortality, there has been a neglect on the rising trends of non-communicable diseases such as hypertension. This article seeks to evaluate the burden of hypertension in SSA and to identify key steps to help the management of this emerging crisis in the sub-region.

OVERVIEW OF HYPERTENSION IN THE SUB-REGION

Africa has traditionally borne the largest burden of illness and deaths associated with communicable diseases. (7) However, this trend is speedily shifting towards chronic non-communicable diseases including CVDs leading to coining of the term "double burden of disease" (8).

In 2000, sub-Saharan Africa was estimated at about 80 million hypertensive adults and data from current epidemiological projects indicate that this figure

will increase to 150 million by 2025 (9). This emerging trend has been fueled by factors including population growth and ageing, rising urbanization, mass rural-urban migration, and rising uptake of western lifestyles (smoking and alcohol consumption) (9,10). WHO forecasts that the next ten years will see death rates from CVDs increasing in Africa which will translate into a negative economic impact on the continent (11). Evidence from some studies increasing complications of stroke and heart failure from hypertension in the Africa. (12,13)

PREVALENCE OF HYPERTENSION

Several studies have been carried out on hypertension in SSA with some being at the national level and others in the urban or rural communities (14–16). Kayima et al in their recent publication showed a wide variation in the prevalence of hypertension across Africa (16). The observations from various studies indicate that most prevalence rates are not age standardized and hence comparison with other studies are difficult. Studies that focused on individuals under 35 years of age showed prevalence of 9.3% and 48.1 in Ethiopia (17) and Mozambique (18) respectively. Studies in individuals over 35 years in an urban Tanzania showed a higher prevalence of 70%. (19) Addo et al in 2007 reported high prevalence in a systemic review of studies in African populations(15). Dalai et al also conducted a comprehensive review of non-communicable diseases in SSA in 2011 and found the prevalence of hypertension ranging from 6 to 48% overall with Tanzania recording the lowest figure whilst rural Nigeria had the highest rate (20). The burden is not peculiar to urban areas as studies in rural areas in sub-Saharan Africa have also revealed a high rate. (21–23)

Reports have shown that urban populations consistently have higher prevalence of hypertension than their rural counterparts in almost all studies that covered both area (15). This observation has been suggested to be linked with increased levels of obesity, salt and fat intake from increased consumption of processed foods, and engaging in jobs with minimal physical activity and smoking.

The institutionalization of highly active antiretroviral therapy (HAART) resulting in increased survival rates of HIV infected persons has also been seen to link with increased cardiovascular and metabolic complications. (14).

LEVEL OF AWARENESS OF HYPERTENSION

Research findings indicate that an enormous proportion of affected individuals are unaware. (16) However, several African nations apathetic towards public health response to the menace. Studies have also reported higher detection, treatment, and control rates in women than men in SSA (15, 16). Factors such as women having better health seeking behaviours demonstrated in some studies (24, 25) and also getting access to blood pressure measurement during contact with a health institution whilst pregnant may be possible explanations for higher detection among women.

Hypertension is a silent disease implying that without regular blood pressure monitoring for an ageing population, complications such as stroke, myocardial infarction and renal failure presentation at the health facility may be the only ways to detect it which might be too late. With the existing strain on health facilities in SSA, most hospitals are inadequately resourced to manage the late complications of hypertension and its attendant interventions such as the need for long-term dialysis. In most African countries, hypertension awareness and control programs are yet to be implemented on a population-wide scale (26) posing a hindrance to achieving global targets.

CHALLENGES IN THE TREATMENT OF HYPERTENSION

Hypertension, like other non-communicable diseases in SSA is struggling to receive the needed attention it requires as most national programs are structured towards battling infectious diseases. The malaria control programs, tuberculosis control programs and HIV control programs are the leading national health interventions put in place by most African countries.

Ataklte et al in 2014 recorded that 18% of individuals with hypertension were receiving treatment across the studies done in SSA with only 7% having controlled blood pressure (27). Rural regions have recorded lower treatment covered as compared to urban areas (16). Hypertension is inadequately diagnosed and managed in many sub-Saharan regions. Factors such as poor access to health services, cost of treatment and poorly resourced health facilities may be attributed to the low level of treatment of hypertension. The morbidity and mortality associated with hypertension has risen with corresponding rising burden on health care resources because of the low detection and suboptimal blood pressure control among the diagnosed (28). This is in contrast with developed countries where morbidity and mortality associated with hypertension has seen appreciable reduction in over the last fifty years (29, 30). Treatment and control of hypertension has been proven to result in better cardiovascular outcomes as evident in large clinical trials which showed 40% reduction in stroke and a minimum of 25% in myocardial infarction (31, 32).

The Eight Joint National Committee (JNC 8) in its recent publications on the treatment of hypertension recommends initiation of antihypertensive to reduce blood pressure to less than 140/90mmHg (systolic/diastolic BP) for ages less than 60 years and less than 150/90mmHg (systolic/diastolic BP) for ages older than 60 years. The committee further recommends initial treatment of hypertension to include a thiazide-type diuretic or a calcium channel blocker for the general black population (33). Diabetes screening and management is also recommended among the hypertensive population as they tend to frequently occur together (34). The SPRINT study showed that among hypertensive adults without diabetes, lowering systolic blood pressure to less than 120mmHg, instead of the standard goal of less than 140mmHg, resulted in significantly lower rates of fatal and nonfatal CVD events and death from any cause (35).

PREVENTION AND CONTROL MEASURES

Hypertension can be prevented or controlled with lifestyle modification. Weight loss helps to prevent hypertension and also results in a 5-20mmHg systolic BP reduction per 10kg weight loss. The DASH (Dietary Approaches to Stop Hypertension) diet which is rich in fruits and vegetables is also recommended for managing hypertension (36). Sodium intake should be reduced to enhance hypertension control (37). Reduction in alcohol consumption to less than 30ml of ethanol per day for men and less than 15ml of ethanol per day for women. Cessation of smoking as while as reduction of intake of dietary saturated fat and cholesterol should be encouraged. Engaging

in aerobic exercise at least 30 minutes daily results in a systolic BP reduction of 4-9mmHg (36).

High-income earning countries have achieved reduction in hypertension through the implementation of robust public health policies aimed at reducing salt in processed food, improving the availability and affordability of fruits and vegetables (38), and creating environments that promote physical activity. In low-and middle income countries however, shortcomings in these public health policies and others have facilitated increasing trends of hypertension (3). The public health institutions in SSA need to be strengthened in order to implement preventive methods for blood pressure reduction towards the WHO global target of 25% (3).

Screening for hypertension is done through monitoring of blood pressure. Current evidence indicates that screening for total cardiovascular risk, blood pressure measurement as well as blood glucose testing is more cost effective than screening the whole population for a single risk factor, and is cost effective in identifying individuals at high cardiovascular risk (39-41). In the setting of low and middle income countries, several barriers hinder accurate and affordable blood pressure measurement (42). Some of the barriers include the lack of blood pressure devices, the frequent marketing of non-validated blood pressure devices, general lack of trained personnel and limited trainers (3).

CONCLUSION

In especially urban communities in sub-Saharan Africa, hypertension prevalence is high. There is also suboptimal awareness, detection, treatment and control in people with high illiteracy and low socioeconomic status as seen in most African countries.

Greater efforts should be put in place to make hypertension a priority alongside diseases like HIV, TB and malaria. Prevention and treatment of hypertension is cheap and easy to implement. Targeted routine screening programs, availability of blood pressure monitoring devices, lifestyle modification and usage of antihypertensive are effect in reduction of blood pressure leading to improvement in cardiovascular outcomes.

Sub-Saharan Africa has to join efforts with the international communities to achieve global targets for raised blood pressure management.

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