Epidemic Hypertension in Sub-Saharan Africa

Lewis H. Kuller

The article “Hypertension in Sub-Saharan Africa” by Addo et al has documented both the high prevalence of hypertension, especially in urban areas, and poor control of hypertension in sub-Saharan Africa. In 1992, we reported the high prevalence of hypertensive disease in a population sample from Benin, Nigeria and the strong association with higher socioeconomic class and body weight. Previous reports from the World Health Organization (WHO) and other groups have warned of the growing epidemic of hypertension and vascular disease and, most important, the need for both population-based approaches to reduce the epidemic, including the reduction of salt in the diet and treatment of BP using inexpensive drug therapies.

There is a need for better data on the prevalence of hypertension and risk factors related to both hypertension and vascular disease in sub-Saharan Africa. The most important imperative at the present time is to effectively blunt this growing epidemic of vascular disease. This epidemic of vascular disease is following the path characteristic of many other countries and especially in the United States, with initial high rates of hypertension and vascular disease among the upper socioeconomic groups and then explosive epidemics of both hypertension and vascular disease among lower income populations, especially the black population in the United States. The key variables that drive the epidemics are the greater use of processed foods, higher intake of calories, decreased physical activity leading to weight gain, and the reduction of foods high in potassium.

The epidemic, as noted, has begun in the upper social classes and in urban areas, similar to the United States. Over time, the epidemic spreads to lower socioeconomic groups. The increase in BP levels in the population is the primary concern. The risk of cardiovascular disease (CVD) is linearly related to BP levels and the increase in the average population BP levels will, over time, lead to an increase in stroke, kidney disease, and heart failure. The opportunity for successful public health primary prevention is greatly reduced by the time there is an obvious major epidemic of clinical CVD. Pharmacological and surgical therapies become the primary method of reducing the burden of disease, with substantial increasing cost and much greater disability.

The increasing prevalence of CVD, especially in the upper socioeconomic population, results in greater demand of high cost health services in countries where the need for health services to deal with the problems of infectious diseases, malnutrition, pregnancy outcomes are in short supply. These high-cost health services for vascular disease shifts badly needed limited health resources from lower to upper socioeconomic groups. Increase in stroke, renal disease, etc can also have a devastating impact on the better educated and potential national leaders and on the evolving political structures in these countries.

The needed public health efforts to blunt the epidemic are mostly nonexistent. The current failure, unfortunately, to deal with the growing CV epidemic in Africa will almost certainly have disastrous implications. The question is—why the inaction? First, as noted the importance of the epidemic of infectious diseases, malnutrition, and, more recently, AIDS have preoccupied the health agencies and funding resources. In most of these countries, there is an inadequate health care system which has been further damaged by exodus of physicians and nurses to higher paying jobs in Western industrialized countries. Unfortunately, there is a schism between the public health community primarily focusing on the problems of infectious diseases, malnutrition, etc, especially in the rural and lower socioeconomic populations and growing prevalence of hypertension and vascular disease.

The argument that the priorities for controlling infectious diseases and malnutrition make the problems of chronic diseases a much lower priority, ie, the choice of one over the other, may not be the best approach.

The second problem is the economic impact of industry that encourages a switch to processed foods that are likely high-salt, high-fat, and high-caloric Western-style diets. The introduction of more processed high-salt food and calorically dense food as well as cigarette smoking are the primary causes of CVD epidemics. Many industries have been successful in convincing government agencies that salt is not related to hypertension except in a few genetically susceptible individuals, that cigarette smoking will not cause lung cancer or CVD, that cholesterol and saturated fat are not the primary determinants of CHD. Only recently has the American Medical Association and the British government begun to take an active role in trying to reduce the amount of salt in the diet. It is not possible to substantially reduce the salt intake in the population except by reducing the amount of salt in processed foods. The goal of 5 g of salt in the diet, as recommended in the United States and Britain, is probably too high but is still an initial first step.

The third problem is the overemphasis on interesting and new scientific investigation rather than on public health/ preventive medicine action. There are a relatively small number of high quality studies measuring prevalence and an even smaller number evaluating risk factors and genetics of hypertension and CVD in sub-Saharan Africa. It would be
useful to have both more and better studies. However, the need for public health and preventive medicine action must have a higher priority.

Very low cost effective drug treatment for hypertension and CVD are available. Some have suggested introducing a poly-pill approach into these areas as the most cost effective approach to deal with the range of CV risk factors and prevent stroke, renal disease, and coronary disease. Much of the management of hypertension in the sub-Saharan region can be accomplished by using trained health aids and limited input of physicians and nurses who are in extremely small supply. Novel approaches of delivering therapies may be an important research question that needs further evaluation. The inadequate health care delivery infrastructure in many of these countries and the “physician and nurse outmigration” to Western countries will continue to be a major limiting factor for successful vascular disease prevention programs. Just providing low-cost drug treatment for hypertension without developing and funding the health care infrastructure will not be successful.

Unfortunately, there is an increasing emphasis on the use of more costly new drugs, laboratory tests, and new technologies as modern high technology Western medicine also infiltrates into the medical systems. There is also a tendency of the introduction of expensive technology. Many of these technologies are certainly interesting and are of great value in the United States and in other countries and are obviously of considerable research interest even in sub-Saharan Africa but they must have a lower priority until the epidemic of hypertensive disease is well-controlled.

There is a strong familial aggregation of both BP and salt sensitivity most likely related to genetic polymorphisms that contribute to BP levels. It would be interesting to understand the genetics of hypertensive disease in sub-Saharan African as well as in the United States and be able to compare similarities and differences in the determinants of BP levels.

In summary, the article by Addo et al further discussed the increased prevalence of elevated BP in sub-Saharan Africa. There is a growing “common source epidemic” attributable to diet change. The epidemic cannot be controlled by identifying each individual with elevated BP or determining genetic susceptibility to the changing lifestyles and then limit dietary manipulation to a subset of the population. This will not work in spite of growing interest that such an approach may be feasible. BP levels are high and are increasing over time and especially in the upper socioeconomic class and in urban areas. We must act now to prevent and control epidemic vascular disease in this region of the world.

Disclosures
None.

References
Epidemic Hypertension in Sub-Saharan Africa
Lewis H. Kuller

Hypertension. 2007;50:1004-1005; originally published online October 22, 2007; doi: 10.1161/HYPERTENSIONAHA.107.095620

Hypertension is published by the American Heart Association, 7272 Greenville Avenue, Dallas, TX 75231
Copyright © 2007 American Heart Association, Inc. All rights reserved.
Print ISSN: 0194-911X. Online ISSN: 1524-4563

The online version of this article, along with updated information and services, is located on the World Wide Web at:
http://hyper.ahajournals.org/content/50/6/1004

Permissions: Requests for permissions to reproduce figures, tables, or portions of articles originally published in Hypertension can be obtained via RightsLink, a service of the Copyright Clearance Center, not the Editorial Office. Once the online version of the published article for which permission is being requested is located, click Request Permissions in the middle column of the Web page under Services. Further information about this process is available in the Permissions and Rights Question and Answer document.

Reprints: Information about reprints can be found online at:
http://www.lww.com/reprints

Subscriptions: Information about subscribing to Hypertension is online at:
http://hyper.ahajournals.org//subscriptions/