COMMENTARIES

CARDIOVASCULAR DISEASE MORTALITY IN SUB-SAHARAN AFRICA AND THE CARIBBEAN

Hakeem Ayinde, MD; Richard F. Gillum, MD

Is there a full-blown stroke epidemic and a growing ischemic heart disease (IHD) epidemic in Sub-Saharan Africa? We aim to further understand the evolution of stroke and IHD in Sub-Saharan Africa with an analysis of the most recent Global Burden of Disease estimates of mortality for men of Sub-Saharan African descent in Africa and in the Caribbean and a review of recent studies found on PubMed and reference lists of published articles. Stroke is the most important cause of cardiovascular disease mortality in men aged 60–64 years in Africa and the Caribbean, but death rates and rank may vary by region. Ischemic heart disease is a leading cause in the Caribbean. 

(ETHN DIS. 2014;24(4):495–501)

Key Words: Ischemic Heart Disease, Stroke, CVD Risk Factors, Africa, Caribbean

INTRODUCTION

African Americans and European Americans are part of a global pandemic of ischemic heart disease (IHD) and stroke.1–10 But, are Africans protected from IHD and predisposed to hypertensive disease and stroke?1–6 In the 20th century, IHD became a leading cause of death among African Americans,6,11 with death rates eventually, like stroke, exceeding those in European Americans.3 But, is there a full-blown stroke epidemic and a growing IHD epidemic in Sub-Saharan Africa?29 In this commentary, we aim to expand the understanding of the evolution of stroke and IHD in Sub-Saharan Africa with an analysis of the most recent Global Burden of Disease estimates of mortality for men of Sub-Saharan African descent in Africa and in the Caribbean and provide a review of recent studies found on PubMed and reference lists of published articles.

ISCHEMIC AND HYPERTENSIVE HEART DISEASE

Among studies of the last decade,11–20 the INTERHEART Africa study,11 a case-control study between 1999 and 2003, explored risk factors for myocardial infarction across three different ethnicities. Despite having a better overall lipid profile compared to other ethnicities, Sub-Saharan African men with hypertension and diabetes were found to have a 2–3 times increased risk for myocardial infarction; hypertension was the most common cause of heart failure in Sub-Saharan African men. The Sub-Saharan Africa Survey of Heart Failure study found that heart failure was due to hypertension in 45.3% of cases, while IHD accounted for only 7.7%.12 The Heart of Soweto study found that Blacks were more likely than other groups to have heart failure (54% vs 45%), and far less likely to have IHD (6% vs 38%), with 68% of heart failure caused by hypertension or dilated cardiomyopathy.13 Hypertension prevalence rates were 25%–33% in rural, and up to 39% in urban Africa.14–18 Among hypertensives, awareness was 15%–34%, with a 6%–8% control rate.19,20 Urbanization and westernization contributed to the burden of hypertension.21 Thus, studies in Africa have revealed low incidence of IHD but high hypertensive morbidity.

STROKE

The Tanzania Stroke Incidence Project22 met proposed criteria for stroke incidence studies23 with community-based surveillance and verbal autopsies between 2003 and 2006. Hai (a rural setting) had an age-standardized stroke incidence rate of 108.6 per 100,000, similar to developed countries.22 Dar-ES-Salaam (an urban setting) had an age-standardized incidence of 315.9 per 100,000.23 For comparison, the Northern Manhattan Stroke Study of 1993 to 1996 found an incidence of 93 per 100,000 among Whites and 223 per 100,000 among Blacks aged ≥ 20 years.24 Between August 2005 and July 2006 in Maputo, Mozambique, CT scans and autopsies were utilized in the diagnosis of 92.3% of incident strokes. 58.4% had ischemic stroke, 40.3% had hemorrhagic stroke and 1.3% had sub-ependymal hemorrhage. Hemorrhagic stroke was associated with a 2–3 fold increase in case fatality.20 Case fatality in Sub-Saharan Africa at one month has been reported at between 27% and 50% compared to 23% in the rest of the world,18,20,25–27 likely due to limited access to quality stroke care. Hypertension population attributable fraction is about 50% for stroke mortality.20 Reducing the diastolic blood pressure by 10 mm Hg was associated with a 50% reduction in stroke incidence.29 Hypertension prevalence was 86.6% and 96% respectively in an African ischemic stroke and hemorrhagic stroke